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Textile World

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Insuring Regularity of Employment

THERE is something almost naïve about the way in which many industrialists are approaching the question of regularity of employment today. Their attitude implies that a new problem has been "discovered"; that the depression of 1930 has created a new set of facts calling for a new type of action.

As a matter of fact, the problem has been in the making for decades. The only new thing about it is that, in past years, it has been classified under some such heading as "technological unemployment" and left to the tender mercies of students and economists, whereas in 1930 it has become a personal and dramatic problem to the average citizen.

And in that difference lies the main hope for its solution—that is, unless memory is so short-lived that the return of general prosperity will once more pigeon-hole the question.

One fact stands out: There is no one factor which demands—and will continue to demand—more careful consideration by industry.

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In textile manufacture we have made progress, co-operatively. Many of the activities projected in the last year or two have as either a direct or an indirect objective, the leveling of the peaks and valleys in the employment curve.

Individually, however, there has not been corresponding progress. Manufacturers devote far more thought to purchase of raw material, to machine settings, to competitors' prices.

Consequently, we were much impressed recently when we encountered one company which had set up the solution of this problem as one of its major activities. We cite it, not as the only company which is making such an approach, but as one of the exceptions.

Briefly, the plan is:

Well in advance of the beginning of the fiscal year, the company, on the basis of statistical data developed by the industry at large plus information supplied by its own sales organization, estimates its probable shipments for the year, due allowance being made for varying conditions, both within and without the industry. From this, the average production rate for the plant is determined.

Naturally, like all budgets, this quota is subject to change as the year progresses; otherwise it would be another case of glorifying a system at the expense of its application.

But here is the point: Such changes as may be necessary are made periodically, every half-quarter sales and production plans being reviewed, and the mill manager is advised of the actual quota approximately six weeks in advance of the beginning of the half-quarter. For example, he has already received the quota which will be in effect the latter half of February and all of March. He has the next six weeks in which to make labor adjustments necessary to adapt the plant to that quota.

Thus he is always in a position to guarantee full time employment to all workers for at least a month and a half ahead, within the tolerance margin of 10% over and 10% under the production quota. This leeway is maintained on the basis that no such plan can be iron-clad, and that there is sufficient flexibility within the organization to accommodate a 10% variation one way or the other, without the necessity of taking on new help if it is an increase, or letting workers go if it is a decrease.

The company in question, having had the plan in operation about a year, feels that it is too early to evaluate its results in final terms but is

confident that it is practicable and that it will accomplish its objective.

Here are some of the benefits of the plan:

1. There is no labor turnover for which the company is responsible.

2. The cost of breaking in new workers is greatly reduced.

3. Better quality of work is secured throughout the plant.

4. Cost per unit is reduced.

5. Human suffering is alleviated by prevention rather than by emergency cures.

6. The maintenance of the production quota is reflected at the sales end; sales quotas become living things—necessary to achieve if hundreds of workers are to be enabled to progress.

It will be seen that the plan is not a philanthropic one. It is not "welfare" work. Most of its results are economic, affecting the mill management at least as much as the employees.

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We do not cite this plan as a revolutionary one—as a new approach to an old problem. In essence, it is similar to those employed in many progressive industries. In the textile industry, it is comparatively new.

Nor do we advance it as a method which can be applied immediately to all mills. It requires, as a basis, sales and production planning for the company as a whole.

And the reaction of many textile men to the question of such control is: It can't be done.

The answer is: It is being done.

Granted that conditions in individual mills differ widely; that in some types and under some conditions, long-time planning is extremely difficult—nevertheless some form of planning, shaped to fit individual requirements, is not only feasible but absolutely necessary.

When the majority of textile manufacturers have developed their own control programs, and have applied those programs to productive activity as well as to sales, one of the most important and most effective steps will have been taken toward permanent prosperity for textile companies and their employees.

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TEXTILE WORLD is a consolidation of *Textile World Record* and *Textile Manufacturers Journal*, effected in 1915.

Textile World Record was the paper resulting from the merger, in 1903, of *Textile World* and *Textile Record*. The former was founded in 1888 by Walter B. Guild and Henry G. Lord. In 1895 it absorbed *Industrial Record*, formerly *Manufacturers Review and Industrial Record*, which was started in Boston in 1868. *Textile Record* was founded in 1880 in Philadelphia by Charles Heber Clark and Frank L. Nagle.

Textile Manufacturers Journal was founded in New York in 1894 by Joseph H. Bragdon. The merger of *Textile World Record* and *Textile Manufacturers Journal* in 1915 resulted in the formation of Bragdon, Lord & Nagle Co., Inc., and publication of *Textile World Journal*, later shortened to TEXTILE WORLD.

In 1923 *Posselt's Textile Journal* was absorbed by TEXTILE WORLD; and in 1924 *Textiles* was also absorbed.

In 1928, TEXTILE WORLD became affiliated with the McGraw-Hill Publishing Co.

The editorial staff of TEXTILE WORLD consists of: Douglas G. Woolf, editor; William B. Dall, managing editor; Edwin D. Fowle, associate editor; John Black, Winn W. Chase and Warren C. Steele, assistant editors; Ralph C. Maultsby, southern editor; James A. Austin, New England editor; Elmer Loemker, art director; N. Waldron, editorial assistant.

[NOTE: The above historical summary is published semiannually for purposes of record.]

Decatur M. Sawyer

DECATUR M. SAWYER, prominent in the New York dry goods commission district for 40 years prior to his retirement in 1915, died at his home in Montclair, N. J., Wednesday of this week after a short illness, at the age of 81 years.

In his passing, TEXTILE WORLD loses one of its closest friends and advisors. Through his friendship with Joseph H. Bragdon, Sr., who founded *Textile Manufacturers Journal* in 1894, Mr. Sawyer consented to serve on the board of directors of Joseph H. Bragdon & Co., from its incorporation in 1906 until 1915 when merger with Lord & Nagle Co. resulted in formation of Bragdon, Lord & Nagle Co., Inc., and the publication of *Textile World Journal*, later shortened to TEXTILE WORLD. Even after his withdrawal from the board of directors however Mr. Sawyer continued to take a close personal interest in the development of this publication, read each issue carefully, and supplied suggestions and inspiration. As recently as a month ago, he called at the office in New York and visited with members of the TEXTILE WORLD organization.

Mr. Sawyer was born on a farm in Needham, Mass., Feb. 1, 1849. He came to New York in 1874 and was a partner successively in Gowing, Grew & Co., Gowing, Sawyer & Co., and Sawyer & Blake, located at the corner of Leonard and Church Streets. He had a host of friends in the dry goods district.

He was actively identified with prison reform, serving for many years as president of the board of managers of the New Jersey State Reformatory at Rahway, N. J. He was also secretary of the Prison Association of New York for some years and was treasurer of the American Prison Association. He had a wide acquaintance among men active in prison work throughout the country.

Mr. Sawyer was also active in the affairs of the town of Montclair and the Protestant Episcopal Church. He travelled widely, having gone to Europe ten times and also having visited countries in the Far East and in Central America.

Funeral services were held at St. Luke's Protestant Episcopal Church, Montclair, Friday morning. Burial was at Rosedale Cemetery.

Mr. Sawyer's wife died in 1917. He is survived by three daughters.

Worsted Spinners Now Without Leadership

THE sales worsted yarn spinning trade is in one of the most confused states that has prevailed in that field during the last decade, so far as cooperative activities are concerned. Although no official announcement has been made, sales worsted spinners are no longer a part of The Wool Institute, Inc., in practice, although in theory there has been no definite separation. To all intents and purpose this affiliation is at an end.

Worsted spinners, when they became members of the Institute, were assessed for membership dues on the basis of number of spindles, and dues that have been paid were to cover expenses in the work of the Institute until next April. Actually there are no funds available now for their activity.

If there were any evidence that the Spinning Division of The Wool Institute had failed as a constructive influence in the sales worsted yarn field, its discontinuance would be justified. However, all information we have points to the contrary. Consequently, failure to support it must necessarily be interpreted as a serious reflection upon the enterprise and attitude of the industry itself.—*Editor*

Spinners are without organization or discernible leadership. When they became associated with The Wool Institute, Inc., their former organization, the National Association of Worsted and Woolen Spinners, automatically went out of existence.

The present situation is confusing in that not all, in fact not a majority, of spinners know or realize this condition does exist. No announcement has been made by either the officials of the Institute or by spinners, and yet Dec. 31, 1930, witnessed a development that is of major importance to the sales yarn business in this country.

If action is not taken, the accrued benefits of their membership in the Institute and all that this implies will be lost to spinners and for the first time in years the worsted spinning trade will be entirely unorganized. This is particularly important to this or any other trade just at this point in economic history when trade cooperation seems more essential than ever before.

Bulk of Trade Members

The spinning division of The Wool Institute, Inc., was formed April 15, 1929. Reliable informants advise TEXTILE WORLD that at the end of last year spinning members represented about 85% of the sales English spinning business of the country; about 75% of the English weaving and about 70% of the French system spinning.

It may be assumed in view of these figures that 75% of the sales yarn trade had expressed its willingness to cooperate through the Institute, a total which is generally felt by other industries in this country to make such effort a success. In large part, the work of the spinning division was compiling production and sales statistics based on reports furnished by individual members. Charts presented, in graphic form, the actual condition of the sales yarn business from the standpoint of sales and production.

A beginning had also been made in the spinning division to adopt a code of trade practices by means of which it was hoped to eliminate most of the unethical practices which have stolen into the business.

Separate group meetings were held monthly by the three groups in order that discussions might be to the point and involve problems of concern to all attending.

Richardson the Field Agent

The spinning group was represented at the institute by a field agent, William H. Richardson, who was appointed at the time spinners became members. Mr. Richardson had been prominently identified with the sales yarn business for 38 years; during that time he represented a number of the most important firms in the field, including the Cleveland Worsted Mills Co.

The Industrial Research Department of the University of Pennsylvania, in a recently completed survey of the sales worsted yarn business, gives as one of their major conclusions: "Adequate data are a pressing need if the capacity situation in worsted sales yarn is to be understood and controlled."

Most spinners interviewed are fully aware of the imperative need of such information as the Institute has been preparing during the last year or more. In fact most all feel that it will be impossible, under present economic conditions for the sales yarn trade to remain in business, let alone become a prosperous unit, if some form of cooperation is not adopted.

Opinion as a result of an investigation by TEXTILE WORLD points to a majority favoring continuation of the spinners' affiliation with The Wool Institute. It is felt that the tools for the work are here at hand and it would be a mistake not to continue to take advantage of them.

Botany Favors Institute

The view of Col. Charles F. H. Johnson, president, Botany Worsted Mills, Passaic, N. J., is typical of all. Col. Johnson says, "If the worsted spinning business cannot get together and work together it does not deserve to stay in existence." He believes that it would be suicide to allow the good work that has been accomplished by the Institute to be wasted. Col. Johnson stated that his firm was back of the Institute in the past and would be to "the end." He believes that it is just as necessary for the spinning business as is an available wool supply.

With the trade in this frame of mind it remains for leaders of the spinning group "to begin going somewhere."

The Week in Textiles

Hail and Farewell! . . .

A. D. WHITESIDE, president of the Wool Institute since its organization, tendered his resignation to that body nearly a year ago. It was effective Dec. 31, 1930. . . . . The textile industry has great respect for Mr. Whiteside and his recognized executive ability. It is with regret that we see him leave it. Members of the Institute and others wish him success in the important work that he has set for himself as head of one of the world's largest credit organizations. He is now president of the R. G. Dun Corp.

Wool Machinery Activity . . .

WOOLEN MANUFACTURE held up better than worsted in November, according to the Department of Commerce. Activity of cards in November was only about 3% less than in previous month while combs dropped from 74.1% in October to 65.4% active in November; worsted spindles dropped about 10% while woolen declined less than 1%. Wide looms were 0.2% more active; narrow looms about 7% less active; carpet manufacturers made an unimportant gain.

More Cotton Stationery . . .

THE COTTON STATIONERY "boom" has reached such proportions that more than 2,000,000 sq.yd. of print and shade cotton cloths have been used for this purpose to date, according to figures compiled by the new uses department of The Cotton-Textile Institute. . . . . Development of this novel market has been stimulated, first by improvement in quality of fabric, and second, by price reductions which have made cotton stationery competitive with other stationery materials. . . . . Recently the Southern Railway System introduced cotton menu cards in its dining cars, and numerous southern trade associations print convention programs on the same fabric. . . . . Across the Atlantic, the International Federation of Master Cotton Spinners, of Manchester, is using an excellent engraved letterhead on American cotton fabric supplied to them by The Cotton-Textile Institute. . . . . Numerous rubber, oil and textile corporations now are using cotton stationery for direct mail material. . . . . We await the advent of cotton newspapers, calendars, and—well, why not?—maybe even telephone books!

Less Wool Consumed . . .

CONSUMPTION OF wool in November, 1930, was the smallest of any month in that year, December data not yet being available. . . . . According to Department of Commerce, total quantity of wool entering into domestic manufacture in November was 31,236,986 lb. The next smallest month of the year was May when 32,640,860 lb., were consumed. Peak consumption occurred in January, 1930, when 43,626,927 lb. were consumed; in November 60.9% of wool used was domestic and 39.1% foreign.

Prints Turn Up . . .

FURTHER CURTAILMENT in all divisions except prints is indicated by the monthly report issued by the National Association of Finishers of Cotton Fabrics covering December. . . . . Percentages of normal capacity follow, figures being for December and November, 1930, and December, 1929, in that order: white and dyed combined 40, 46, 51; fast black, 12, 20, 19; logwood black, 37, 43, 42; prints 59, 55, 71.

Mills to Farms . . .

COTTON MANUFACTURERS of South Carolina, in a recent advertisement in daily newspapers of the State, are urging land owners, bankers, merchants, law

The Textile Outlook

A HEALTHY viewpoint counts for much and the textile industry seems to have recorded real improvement in this factor with the turn of the year. Instead of looking for the depressing influences and trying to tag them, the textile industry since Jan. 1 has shown itself eagerly looking for the hopeful signs. Not much success greets these efforts so far but the changed psychology is probably the most hopeful sign of all. . . . Cotton goods have recuperated from their December set back. Trading moves again, and on some lines at advances. Wool goods remain sluggish as buyers expect fall line reductions to apply to spring goods. Confidence in values would turn loose a lot of business. The pick-up in knit goods is not expected before February. Raw silk made startling advances and some mills seem short of raw material. Silk dealers now talk of the danger of overconfidence.

The Business Outlook

THINGS are pointed upward as the new year begins. Workers are being recalled after shutdowns for holidays or inventory-taking. Steel activity has rebounded sharply to the end of November level, with improved demand. Automobile production continues the unusual rise that began in December. Building contracts started the year at an encouraging level. Most other indicators have ceased to decline. Our index has moved almost horizontally for four weeks at nearly 77% of normal, and it looks more like the bottom than anything that this depression has so far exposed. Commodity prices are stronger. The stock market has begun to digest the first course of unpalatable earnings reports without signs of colic. An encouraging feature of the bottom of this depression is the steady rise in bond prices since the middle of December.—*The Business Week.*

Parisian three-piece ensemble in wool or silk; at left, black and grey with pleated skirt in a Meyer wool garment; at right, crepe de lainage of wine red and beige

makers, and the general public to cooperate in developing a "well defined program of agricultural revival." Complete sympathy for the back-to-the-farm movement is expressed, together with the startling fact that South Carolina now has 34,799 farms less than in 1920, a loss of 18.1%. . . . . "Curtailed production has necessitated a surplus of labor in mill villages, and while doing everything to alleviate the trouble, it is entirely unlikely that cotton mills will be able to offer employment in 1931 to anything like the number who worked for the mills in 1929."

Rayon and Egg Laying . . .

CELLULOSE ACETATE, most generally associated with manufacture of rayon, is now being produced in such quantities that it is available for general commercial uses, according to an announcement of the Du Pont Rayon Co. Research chemists find there are many unthought of uses for it, including non-inflammable photographic films, plastics, insulations, non-shatterable glass, phonograph records, lacquers and solutions for coating purposes. . . . . May even, through use in interior decoration of hen coops, cause hens to lay more eggs.

Sackcloth, Without the Ashes . . .

A COTTON BAG for farm produce which, when turned inside out, can be used as a work shirt, was one of the new uses for cotton and its products exhibited by George Sloan at the meeting of mill men in Greenville Tuesday. . . . . Other exhibits included a cotton sign poster used by the Whitman Chocolate Co. and made from 80-square print cloth; a cotton cloth menu recently adopted by the diner service of the Southern Railway on its crack train, the Crescent Limited; and a cotton attachment for softening the tone of radio loud speakers. The last might well be applied to calamity howlers who overlook the silver lining and see only the cloud.

Army Buying Helps Cotton Goods . . .

BIDS WERE recently opened at the Philadelphia Quartermaster Depot, U. S. Army, to supply 721,000 yd., 35 in. cotton khaki cloth to be used for uniforms. A wide range was seen in quotations received, the highest being 48.4c. per yd. and the lowest 34.3c. . . . . Award of this large yardage will help the recipient mill for months. Apparently keen desire for the order influenced the closest sort of figuring.

Lower Upholstery Wages . . .

DR. JOSEPH H. WILLITS, University of Pennsylvania, chairman of wage arbitration committee in dispute between 25 upholstery mills and 4,000 employees in Philadelphia, has announced a temporary 14% wage cut for a six-month period. . . . . During this period a study will be made upon which basis the present reduction may be revised, not later than June 30. Both sides hope these mills will be able to compete more successfully as result.

Aunt Dinah's Quilting Party? . . .

THE COTTON-TEXTILE INSTITUTE, INC., is sponsoring sheer cottons for evening dresses. . . . . It seems that the ladies, not content to go a short distance back into the past, are going back to grandmother's day. Dresses not only are down to the ground and have the laces and ruffles of the Gay Nineties but may soon be made from the same materials that swirled in the square dances. . . . . Who knows? Bustles and the old stays may not be far away.

Strikes in Lancashire . . .

DEVELOPMENTS IN Lancashire in dispute over assigning more looms per weaver, are moving rapidly. Strikes commenced at nine Burnley mills on Monday, Jan. 5, and employers will call a lockout at all Burnley mills next Monday if strikes are not cancelled. Employers threaten to call lockout in full weaving industry if operatives continue strike against new piece work wage list.

To Stress Sound Management . . .

"BUILD SOUND MANAGEMENT—From 1930 Experience" is to be the keynote of the twentieth annual convention of the National Retail Dry Goods Association to be held at the Hotel Pennsylvania, New York City, Feb. 2 to 6. . . . . "Nineteen hundred and thirty has taught the banker, the manufacturer and the merchant many valuable lessons—lessons which should not be discarded or easily forgotten in the future," said C. E. Sweitzer, managing director, in announcing the theme. "From these lessons sound business management policies must be established and maintained. Farsighted and progressive merchants have already adjusted themselves to the new economic order. Every merchant who hopes to survive and prosper must do so." . . . . And the same applies to the great industries which supply retailers with merchandise.

STAGING THE FIGHT AGAINST

Eighth Article in Series

Quality Takes Precedence Over Efficiency in Silk-Mill Modernization, *Says Lewin*

An Interview by Edwin D. Fowle with

Irving Lewin

Treasurer, Lang & Lewin, Inc.

"A CLERGYMAN, a former neighbor and good friend of mine, once remarked, 'When I am preaching from the pulpit I expect my congregation to do as I say, not as I do.' You see, this clergyman finds that society is not constructed on a pattern which permits him to adhere with comfort to those exalted principles in which he believes most earnestly. In like manner the condition of the silk industry is not such that one can always entirely live up to the high ideals of management in which one believes."

Thus candidly did Irving Lewin, treasurer of Lang & Lewin, Inc., New York, and well-known exponent of enlightened silk-mill cost accounting, open his discussion of the wear and obsolescence problem. As we settled back comfortably into the easy chairs in his home in upper Manhattan, he added the encouraging remark, "It will not always be so.

"Silk mills," he continued, "are rapidly coming to realize that they cannot pursue their customary methods of management and cost finding if they are to survive. Present business conditions are forcing poorly managed mills to the wall.

"The alertness of a management is reflected by the up-to-dateness of its plant. Becoming more evident every day is the fact that in this maelstrom of competition only those plants which are operating thoroughly modern equipment can hope to keep afloat. Later will come the realization that a definite system for anticipating and deciding upon replacements of obsolete or worn machinery must be maintained to insure the continuation of good quality and high efficiency.

"The one thing which has created the greatest need for the revamping of mill equipment in recent times is the widespread adoption of tin weighting, which came into vogue some years ago. Mills immediately found that defects which would have passed in pure-dyed fabrics were exaggerated to an extent which made the goods unmerchantable. It was found necessary to select a better silk and to revamp the equipment for throwing, winding, warping, and weaving. At that time also, the industry found it necessary to interest itself in proper humidification.

"Those mills which revamped their equipment did so for almost the sole purpose of improving the quality of their products. Later they took steps to increase production and reduce costs. All mills, however, did not see the necessity for this revamping. In fact, there are many mills today which cannot undertake to manufacture any of the better fabrics, simply because they have not brought their equipment up to date. Expert help cannot turn out perfect goods on obsolete machinery, whereas average help can deliver perfect cloth with modern equipment.

"It would be difficult to itemize all the improvements which the alert mills found it advantageous to adopt. Necessity is the mother of invention. Barré cloth, the greatest of all difficulties five years ago, called for an improved let-off, and we are today in the midst of an experimental era on the mechanical let-off. Many mill managers assert that the mechanical device, in its present stage of development, is not a sure means of avoiding barré. Ropes are still preferred in many quarters, when carefully selected and properly adjusted.

"Then came the mechanical and electrical warp stop motions. Within the last two years, the critical market demand has necessitated the elimination of stop marks and bad joinings, and therefore there has been a fairly general adoption of the feeler motion which will stop the loom before the filling runs out. The new feeler has necessitated the use of a bunch builder in the making of quills or cops. New types of quills or cops have likewise been found necessary.

Quality Most Important

"I cannot emphasize too strongly that in the silk business quality is fundamentally more important than production, although the latter is by no means an item to be neglected. From the operating executive's point of view, of course, production is basically the only consideration, because he naturally desires to show a low operating cost. As a matter of fact, too great an effort to attain a low manufacturing cost may be the cause of a serious falling off in profits. Catering to changes in style unquestionably reduces mill efficiency, hinders production, and raises costs; but it is far more economical in the long run than flooding the sales office with unseasonable merchandise and seriously tying up the capital. I present here only the viewpoint of a manufacturer who does his own converting and selling. Of course a gray-goods house has a different problem."

Mr. Lewin followed this general discussion with more detailed reference to the advantages of the modern loom.

WEAR AND OBSOLESCENCE

"This machine, as turned out today," he said, "is of rigid construction, well built, and equipped with anti-friction bearings. It will deliver superior fabric and operate with greater efficiency. It will increase production 20 to 40% over that of the old machine it replaces. This is unquestionably an item of enormous saving; and its effect is felt in direct weaving cost and overhead, not to mention the increased turnover of capital.

Must Offset Fixed Overhead

"It is contended, and properly so, that under recent conditions of business a mill must offset its fixed overhead by the least possible stoppage of its machines and by other steps toward increasing its efficiency. Suppose that the overhead of a certain mill amounts to $8.00 per week per loom, and its average production is 100 yd. per week. The overhead will then be 8c per yard. If a new machine can be installed to increase the production to 125 yd. per week, the overhead can be lowered to 6.4c. per yard, effecting a saving of 1.6c. per yard in mill costs and increasing the profit per week per loom proportionately. On 125 yd. weekly, this saving would amount to $2.00 per week per loom at the mill, without mention of the extra selling profit due to increased production. The new machine which effects this saving will also reduce direct costs and improve the quality of the product.

"Unquestionably the modern non-automatic loom, with its greater and more uniform speed and its fewer stoppages, accomplishes these results. Mills have found it possible, with this machine, to increase the number of looms operated per weaver, although at first and for some time the change causes a drop in efficiency."

I asked Mr. Lewin what the chances are for a widespread adoption of the automatic loom.

"Eventually," he replied, "it will come. Today a very small percentage of the looms in the silk industry are automatic. Many mills catering to style trends still feel that flexibility sufficient to take care of constantly changing styles cannot be obtained with it. The evident advantage in replenishing the filling automatically is that it relieves the weaver of the necessity for guarding against stop and set marks, finding the picks, and rethreading the shuttles, thereby enabling her to tend many more looms. The automatic loom is the only really basic change in weaving equipment which has taken place in at least fifteen years, and it is within only the last year that the silk industry has considered it seriously."

Mr. Lewin next discussed the preparation of the yarns and warps.

"The demand for better quality and higher efficiency has been reflected in the warping department," he said, "where newer, stronger, and faster-running warping frames are called for. There is also a demand for larger creels to insure more economical and efficient operation by increasing production. Longer warps are necessary in mills which are operating on both day and night shifts. Longer warps require stronger warp mills.

"The new requirements are reflected also in the throwing, where modern machinery must be used for the insertion of an even twist. Methods in throwing and redrawing have been somewhat changed to avoid slack twist where the spools are pieced. Places where the twist is slack show up as high lustrous spots when tin weighting is practiced. Again, the tendency is affecting the spool makers; for many silk manufacturers, to cut labor costs, are equipping their plants with winding and warping spools having large-diametered heads."

I inquired as to the basis on which Mr. Lewin would decide definitely that the replacement of an old machine with a new one would be worth while.

"If the advantages of a new machine lie only in a reduction in operating cost," he said, "and it does not effect an improvement in quality, I would base my decision on the time in which the machine would pay for itself. Five years is the longest time that can be reasonably allowed. Of course, if an improvement in quality is afforded by the new machine, the problem is considerably more complicated, and the solution becomes largely a matter of judgment.

(*Continued on p. 76*)

Weaving department of Lang & Lewin, Inc., where great care is taken to maintain both quality of product and efficiency of operation

Census Shows Reduction in Number of Mills, But Increase in Output per Worker

THE 1929 census reports just issued covering the major divisions of the textile industry show reductions in number of establishments engaged, number of wage earners and total value of products, since the previous census in 1927. Shrinkage due to the general business recession directly affected only the last two months of 1929. The changes shown are therefore in large part due to internal conditions.

That efforts toward greater efficiency during the last two or three years have been achieving results is indicated by comparing the value of products per operative in 1929 with the similar figure for 1927. In all cases but that of silk this comparison shows increased output per worker. This gain in the two-year period amounts to 4.6% in cotton, 4.2% in wool and 2.3% in knit goods. In silk there was a decline in value of product per worker of 5.7%. In all probability this last does not reflect decreased efficiency but rather a considerable decline in the value of raw silk and consequently in silk goods.

Value of textile products per wage earner in 1929 varied considerably in different lines. In wool goods the figure is $5,604, in silks $5,564, in knit goods $4,389 and in cotton goods $3,511. In 1927 it was the silk industry which got the greatest money value of product from each of its workers, but wool now leads silk in this respect.

The census reports give figures for cost of materials, fuel and purchased electric current, which when subtracted from the total value of products gives what the Bureau of the Census calls "value added by manufacture."

It is interesting to note that the various branches of the textile industry align themselves in quite a different way when the "value added by manufacture" per operative in 1929 is compared with the similar figure for 1927. The greatest gain here has been made in knit goods with an increase of 7.2%. Wool goods stand next with 5.9% and silk third with 2.1%. The cotton goods industry shows a decline of 3.2% in this factor. Value added by manufacture per operative in 1929 ranged from $1,442 in cotton goods to $2,449 in silk goods.

Comparing 1929 wages with those for 1927 indicates a slight decline traceable probably to mill curtailment, since the figures are not annual wage *scales* but operatives' actual earnings over the 12-month period. Earnings per operative in cotton goods decreased 7.6%, in wool goods 1.2% and in silk goods 0.9%; while in knit goods, earnings increased by 3.9%. Earnings in 1929 ranged from $753 per operative in the cotton industry to $1,115 in wool.

During 1929 the average worker in the silk industry produced a money value equivalent to 5.09 times his own earnings. In wool goods this factor was 5.02, in cotton goods 4.66 and in knit goods 4.26. According to these census figures the value added by manufacture per operative averaged close to twice the operative's earnings. In silk this factor was 2.33, in knit goods 2.14, in wool goods 1.94 and in cotton goods 1.91.

In magnitude, as judged by value of products, the cotton goods industry remains easily the leader, showing nearly twice the figure of any other major branch of the textile industry. Wool goods and knit goods are about on a par, with the latter slightly ahead in 1929 whereas the former held that advantage in 1927. The silk industry in both years made a good fourth.

In number of establishments the four branches of the industry retained their previous order. These figures and the percentage of reduction from 1927 follow: Knit goods 1,729 establishments, off 7.5%; silk 1,434, off 13%; cotton 1,259, off 6.5%; wool 707, off 6.9%. These figures are taken from the major census reports without reference to certain of the minor industries which the census lists separately, such as felts, shoddies, cotton small wares, etc. Summaries of the cotton, wool and knit goods reports follow, silk having been treated on page 79 of our Jan. 3 issue:

Cotton Goods Census

TOTAL quantity of cotton goods manufactured in the United States during 1929 as reported by the Bureau of the Census amounted to 8,207,887,912 sq.yd. as compared with 8,800,673,996 in 1927.

Following are the varieties of fabrics which show a gain in yardage produced between 1927 and 1929: Cord fabrics for tires, tire fabrics other than cord or duck, ounce duck, numbered duck, cottonades and cotton worsteds, towels and toweling, sheets and pillow cases, print cloths, reps, poplins and broadcloths, pajama checks and dimities, voiles, crepes, mosquito netting and tarlatan, cotton table damask, plushes, velvets, velveteens, and corduroys.

The items, which upon similar comparison show a decline, follow: Tire duck, osnaburgs, sheetings, drills, denims, tickings, blankets, napped fabrics, bedspreads and quilts, cotton bags made from fabric woven by same concern, pillow tubing, tobacco, bunting and bandage cloths, lawns, nainsooks, cambrics, twills and sateens, ginghams, cotton tapestries, shirtings, and the catch-all classification of "other woven fabrics."

The leading items entering into the total for woven cotton goods are the following: Sheetings, 1,675,800,190 sq.yd., valued at $145,327,094; print cloth, 1,641,122,024 sq.yd., $117,386,900; cord fabric for tires, 225,253,874 lb., $99,267,577; denims, 248,024,774 sq.yd., $49,674,643; napped fabrics, 332,353,895 sq.yd., $48,594,365; ounce duck (except tire), 185,820,946 sq.yd., $48,539,686; reps, poplins, and broadcloths, 314,388,741 sq.yd., $41,455,527; drills, 324,381,894 sq.yd., $39,795,049; shirtings, made entirely of cotton, 268,713,901 sq.yd., $39,398,491; twills and sateens, 288,648,881 sq.yd., $38,067,700; plushes, velvets, and velveteens, 49,125,410 sq.yd., $37,475,976; draperies (except velvets and plushes), 218,789,748 sq.yd., $36,803,398; towelings and wash cloths, 171,780,412 sq.yd., $34,711,336; fabrics (other than shirtings and draperies), in chief value of cotton, containing rayon, 111,361,202 sq.yd., $28,246,794; lawns, nainsooks, cambrics, and similar muslins, 228,983,406 sq.yd., $25,663,039; fabrics, entirely or in chief value of rayon, 86,652,996 sq.yd., $24,314,400; ginghams, 147,359,086 sq.yd., $17,946,708.

Cotton yarn produced for sale in 1929 amounted to 623,440,414 lb. valued at $246,377,235, compared with 664,334,562 lb. valued at $253,663,750 in 1927. In 1929 the production of carded yarn amounted to 470,953,031 lb. valued at $153,005,563, while the production of combed yarn amounted to 152,487,383 lb. valued at $93,371,672. In 1929 the industry produced less thread but more twine than

in 1927, the total of the two items together in each of the two years being about equal.

Between 1927 and 1929 there was a slight decrease in the quantity of cotton waste produced for sale, while at the same time there was a fair gain in total value of this material, indicating a better price per pound in 1929. In 1929 the quantity amounted to 434,339,156 lb. valued at $32,320,762, while in 1927 the amount involved was 484,416,320 lb. valued at $26,808,651.

Wool Goods Census

WOOLEN and worsted goods produced in 1929 totaled 486,426,902 sq.yd. as compared with 557,990,031 sq.yd. in 1927. The reduction was about equally distributed between the two classes.

As this Census report does not supply itemized comparisons with 1927 we cannot specify on what classes of goods increases or decreases have been made. Of the men's wear fabrics, however, made in 1929 104,506,401 sq.yd. valued at $118,970,123 were woolens, while 127,860,802 sq.yd. valued at $197,168,271 were worsteds. Woolens and worsteds made with cotton or manipulated warp amounted to 77,985,625 sq.yd. valued at $48,318,355. In the women's wear field, woolen fabrics accounted for 48,870,562 sq.yd. valued at $56,791,114, while worsteds accounted for 32,629,966 sq.yd. valued at $41,139,399. Manipulated or cotton warp fabrics were 10,464,058 sq.yd. valued at $7,649,888.

There were over 12 000,000 lb. of all wool blankets made in 1929 valued at $15,507,060, and about 14,000,000 lb. of cotton and wool mixed blankets valued at $9,290,804. Mohair pile fabrics, principally upholstery (not including coatings), totaled 21,310,383 sq.yd. valued at $39,105,808.

Worsted yarns to the amount of 89,033,203 lb. valued at $140,224,859 were made for sale in 1929 as compared with 81,378,178 lb. valued at $125,235,658 in 1927. Woolen yarns made for sale in 1929 amounted to 51,240,109 lb. valued at $35,015,667 as compared with 41,804,274 lb. valued at $31,255,104 in 1927.

In 1929 tops and slubbing for sale amounted to 30,755,505 lb. valued at $50,551,901 as compared with 18,308,311 lb. valued at $20,834,592 in 1927. Noils and wool waste made for sale in 1927 amounted to 43,179,086 lb. valued at $15,573,656, compared with 48,520,419 lb. and $18,526,496.

Knit Goods Census

TOTAL value of knit goods of all kinds made in 1929 was $794,171,600 as compared with $801,426,740 in 1927. Of this total the value of hosiery produced in 1929 amounts to $451,133,190 as compared with $440,572,650 in 1927. Full-fashioned hosiery product in 1929 totaled 31,510,355 doz. prs., a gain of 48% over 1927. For 1929 valuation is $295,571,738, a gain of 27% over 1927. At the same time production of seamless hosiery declined about 20% to 66,496,340 doz. prs., valued at $155,561,452. In 1929 over 5,000,000 doz. prs. of infants' hosiery were produced with a value of about $10,000,000.

Knit underwear declined 18% from a valuation of $148,664,366 in 1927 to $121,839,697 in 1929. Production of shirts and drawers remained about unchanged in 1929, while practically all the decrease occurred in union suits. The only increase in union suit production appeared in silk and rayon mixeed (which amounted to only a very small part of the total). In women's bloomers and step-ins, slips and petticoats, and in infants' underwear small increases were noted in 1929.

Knitted outerwear increased 8½%, the 1929 total being $140,555,177. The following classifications showed gains: Sweaters, bathing suits, headwear, mittens, and dresses and suits. The following showed decreases: Scarfs and shawls, neckties, gloves and golf hose.

Production of knit cloth in 1929 valued at $62,063,559 was an increase of 10% over 1927. Most of this increase appears in rayon tubing, including tricolette. There was also a gain in silk jersey cloth including milanese, but a loss in wool jersey cloth and glove and shoe linings.

COTTON GOODS CENSUS SUMMARY

	1929*	1927	% Increase or decrease (-)
No. of estab.	1,259	1,347	- 6.5
Wage earners (av. for yr.)[1]	428,128	467,596	-8.4
Wages[2]	$322,389,461	$380,909,543	-15.4
Cost of mater'ls, fuel and purch. elec. cur.[2]	885,843,509	871,591,901	1.6
Prod., total val.[2]	1,502,998,464	1,567,400,612	-4.1
Cotton goods	$1,480,359,719	$1,545,370,965	4.2
Other prod. and receipts for contract work	22,638,745	22,029,647	2.8
Value added by manufacture[3]	$617,154,955	$695,808,711	-11.3

KNIT GOODS CENSUS SUMMARY

	1929*	1927	% Increase or decrease (-)
The Industry As a Whole			
Number of estab.	1,729	1,869	-7.5
Wage earners (av. for yr.)[1]	184,122	190,283	-3.2
Wages[2]	$189,371,172	$188,163,458	0.6
Cost of mat'ls, containers fuel & purch. elec. current[2]	$399,817,477	$424,099,384	-5.7
Prod., total val.[2]	$807,660,196	$816,620,494	-1.1
Knit goods	$793,970,282	$800,696,781	-0.8
Other prod. and receipts for contract work	$13,689,914	$15,923,713	-14.0
Val. added by manufac.[3]	$407,842,719	$392,521,110	3.9
Hosiery			
Number of estab.	638	672	-5.1
Wage earners (av. for yr.)[1]	112,500	112,842	-0.3
Wages[2]	$125,129,874	$114,677,845	9.1
Cost of mat., containers, fuel, and purch. elec. current[2]	$210,119,623	$229,939,536	-8.6
Val. of prod.[2]	$467,803,570	$456,913,137	2.4
Val. added by manuf.[3]	$257,683,947	$226,973,601	13.5
Knit Underwear			
Number of estab.	227	285	-20.4
Wage earners (av. for yr.)[1]	37,252	46,227	-19.4
Wages.[2]	$29,883,427	$39,182,748	-23.7
Cost of mat'ls, containers, fuel, and purch. elec. current[2]	$71,724,636	$90,727,774	-20.9
Val. of prod.[2]	$135,357,190	$173,423,491	-21.9
Val. added by manufac.[3]	$63,632,554	$82,695,717	-23.1
Knit Outerwear			
Number of estab.	724	775	-6.6
Wage earners (av. for yr.)[1]	27,080	24,662	9.8
Wages[2]	$26,425,570	$26,199,962	0.9
Cost of mat'ls, containers, fuel, and purch. elec. current[2]	$71,646,820	$64,122,921	11.7
Val. of prod.[2]	$138,573,704	$125,940,929	10.0
Val. added by manufac.[3]	$66,926,884	$61,818,008	8.3
Knit Cloth			
Number of estab.	140	137	2.2
Wage earners (av. for yr.)[1]	7,290	6,552	11.3
Wages[2]	$7,932,301	$8,102,903	-2.1
Cost of mat'ls, containers, fuel and purch. elec. current[2]	$46,326,398	$39,309,153	17.9
Val. of prod.[2]	$65,925,732	$60,342,937	9.3
Val. added by manufac.[3]	$19,599,334	$21,033,784	-6.8

*1929 figures preliminary and subject to revision.

[1]Not including salaried employees.

[2]Manufacturers' profits can not be calculated from the census figures because no data are collected for certain expense items, such as interest on investment, rent, depreciation, taxes, insurance, and advertising.

[3]Value of products less cost of materials, fuel, and purchased electric current.

WOOL GOODS CENSUS SUMMARY

	1929*	1927	% Increase or decrease (-)
Industry as a Whole			
Number of estab.	707	759	-6.9
Wage earners (av. for yr.)[1]	143,303	154,361	-7.2
Wages[2]	$159,507,963	$173,821,905	-8.2
Cost of mat'ls, fuel & purch. elec. cur.[2]	$490,679,605	$502,107,842	-2.3
Prod., total val.[2]	$801,415,325	$817,978,299	-2.0
Wool goods	$768,530,643	$794,063,008	-3.2
Other prod. and receipts for contract work	$32,884,682	$23,915,291	37.5
Val. added by manufac.[3]	$310,735,720	$315,870,457	-1.6
Woolen Goods			
Number of estab.	446	471	-5.3
Wage earners (av. for yr.)[1]	56,707	61,790	-8.2
Wages[2]	$64,264,720	$72,156,158	-10.9
Cost of mat'ls, fuel & purch. elec. cur.[2]	$163,237,921	$172,700,233	-5.5
Prod., total val.[2]	$286,004,507	$301,308,743	-5.1
Wool goods	$279,621,801	$297,431,234	-6.0
Other prod. and receipts for contract work	$6,382,706	$3,877,509	64.6
Val. added by manufac.[3]	$122,766,586	$128,608,510	-4.5
Worsted Goods			
Number of estab.	261	288	-9.4
Wage earners (av. for yr.)[1]	86,596	92,571	-6.5
Wages[2]	$95,243,243	$101,665,747	-6.3
Cost of mat'ls, fuel & purch. elec. cur.[2]	$327,441,684	$329,407,609	-0.6
Prod., total val.[2]	$515,410,818	$516,669,556	-0.2
Wool goods	$488,908,842	$496,631,774	-1.6
Other prod. and receipts for contract work	$26,501,976	$20,037,782	32.3
Val. added by manufac.[3]	$187,969,134	$187,261,947	0.4

A Method of Predetermining Costs in Cotton Yarn Mills

ONE more step was taken this week toward the development of sound and uniform methods of cost finding in the cotton textile industry when copies of a cost manual entitled "A Method of Predetermining Costs in Cotton Yarn Mills" were distributed by The Cotton-Textile Institute to all cotton mills in the country whether yarn mills or cloth mills, and whether members or non-members of the Institute. The manual has been prepared by the Cost Section of the Institute after long study of opinions and practices in respect to cost procedure in the industry, and it is believed that it represents a demonstration of the best composite thought and experience available regarding this subject.

The manual takes an imaginary mill with a given list of machinery, payroll, and variety of production, and shows every detail of the analysis of this basic information and of the final development of individual costs on each variety of yarn which the mill is assumed to be producing. It is intended that the manual shall serve as a guide for the eventual establishment of uniform methods of cost finding among cotton yarn mills.

The basic data as to overhead charges, labor budgets, production rates, etc., from which the actual computations have been made, represent the actual performances and usages of no one particular mill. It is emphasized that neither the basic data nor the final costs should in any way be regarded as standards by which to gauge the effectiveness of any individual mill's performances since they do not represent ideal conditions, nor is it likely that they depict average performance for carded yarn mills.

The actual procedure in setting up these figures has consisted of imagining a hypothetical southern carded yarn mill of about 25,000 spindles, operating 55 hours weekly, with no night operation, purchasing its power, and manufacturing a relatively simple variety of product. Certain expenditures and productions necessarily have been applied to this situation but the figures themselves are employed merely to illustrate the methods used.

The objective which the Institute had in mind in developing this manual is explained concisely yet comprehensively in the foreword written by Sydney P. Munroe, manager of the Cost Section:

"Recent observations indicate that many yarn mills either make no effort to distinguish the costs of their various yarns or do so in a manner which provides dangerously misleading results. Market price differentials as between different numbers, twists, and "put-ups" of yarn do not correctly reflect the cost differentials of such yarns. Without a reasonably correct knowledge of the cost distinctions in question, it is obviously impossible for any management to establish a figure at which a specific sale will begin to show a profit, or to determine which of several sales opportunities will be most advantageous.

"An unsound approach to such problems inevitably results in under-estimates on some yarns and over-estimates on others, with the constant tendency to produce more and more of the under-estimated items because they are more easily sold. Regardless of any operation of the so-called law of supply and demand it is inconceivable that any satisfactory or stable market situation can obtain, except sporadically, when many mills enter the market either misinformed or totally uninformed as to the respective costs of their own individual items of production.

"The demonstrations herewith presented are in no way intended to constitute an exhaustive treatise on the ramified subject of textile cost procedure. On the contrary, they have been designed for a specific purpose, and their application beyond the scope of this limited utility may be quite inadvisable.

"The intention in this present effort has been to demonstrate with concrete figures the sound and equitable development of predetermined normal costs of the individual products of carded cotton yarn mills. The methods employed have been selected for the primary purpose of providing dependable guidance as to sales policies. The resulting figures, when properly computed in any individual mill, will provide adequate replies to two important hypothetical questions constantly recurring to the minds of mill executives, namely, 'At what price will this order show a profit?' and 'Which of these sales opportunities is most advantageous?'

"The cost data, especially the overhead and labor budgets, when amplified and supported by adequate pay-roll analyses, production records, etc., should be of very tangible value in the economical conduct of the manufacturing processes, as has been repeatedly demonstrated. However, in the belief that the greatest utility of any cost procedure lies in the guidance it provides in respect to sales policies, our primary purpose herein has been to display the bare essentials of a simple and sound method of obtaining individual costs on which price quotations can be safely based.

Intended as a Demonstration

"With this purpose in mind we have adopted throughout the entire treatise the viewpoint and mental attitude of the economist rather than of the accountant. The detailed procedure, especially in connection with manufacturing distinctions, has been more along engineering than accounting lines. We have been less concerned with terminology and arrangement of figures than with the demonstration of cost methods which will be conducive to the welfare of the industry.

"Specifically, the costs herein developed have been made

"One of the most constructive steps that can be taken for the industry will be to get the individual mills and their selling agencies to keep costs, accurately figured, always in the foreground, rather than in the background or entirely out of sight and out of mind, when sales policies are being considered."—*Walker D. Hines.*

to include depreciation charges based on replacement values, and interest on investment similarly based. It is obvious, in view of the fact that the Federal Treasury Department does not regard interest on investment as a cost deductible for income tax purposes, that cost figures intended to indicate a certain rate of interest return will fail to do so by the amount of income tax pertaining thereto. Logically, provision should therefore be made in such cost figures for the inclusion of taxes so incurred, as well as for income taxes pertaining to the amount by which the depreciation charges included exceed, if at all, those approved by the Treasury Department. However, because of the practical complications which such inclusion of income tax would entail, we have disregarded this feature in the present demonstration, confining ourselves to reminding the reader that this element should be kept in mind.

Moreover, it is desirable that predetermined costs for sales purposes should be so developed as to allow currently and constantly for such reduction of operating schedule (sometimes described as 'curtailment') as the management is able to foresee as normally necessary to adjust its output to demand. Such allowance is readily made, but we have regarded any allowance beyond one week per year (for holidays, etc.) as inappropriate in the present demonstration because of the fact that we have assumed all mills, as well as the one here considered, to be operating on a 55-hour weekly schedule. A careful analysis of statistics indicates that if all yarn mills confined themselves to a maximum weekly operation of 55 hours the demand for yarn would be ample to require all present mills to operate at capacity. If, however, the industry should continue to operate to any great extent on day and night schedules, it must expect to allow in its predetermined costs for heavy curtailment, and this must be carefully predicted.

"To achieve continuing success, a manufacturing enterprise must return amounts sufficient to cover its losses during periods when its goods are not in demand, to enable it to replace its equipment when advisable, to return better than nominal interest on a fair capitalization, and to pay the taxes incurred in thus ensuring its continued health.

"It seems sound to believe that, before going out into the market to sell goods, the management of a mill should be provided with information involving all these considerations, regardless of whether any of these items academically may be termed *cost* or *profit*, or of whether figures representing them can best be entered in one book or another.

"Because in some respects the items above specified do not readily lend themselves to consistent and current inclusion in the general accounting system, because the practice of accountants varies both as to the question and as to the manner of their inclusion, and because of a desire to avoid any unnecessary complication of questionable value, we are not recommending that the cost system, as herein set forth, should be complicated by any elaborate scheme to 'tie it in' with or attach it in any way to the general accounting methods of the mills. We have, however, indicated methods for reconciling the predetermined normal costs with adjusted book figures for actual specific periods, and we urge that this practice be observed.

Absolute Uniformity Not Feasible

"In spite of a quite prevalent and quite understandable public tendency to believe that economic business procedures are matters which can be reduced to rigid rules and empirical formulae, experience nevertheless convinces us that no absolute uniformity of cost procedure can be practically feasible or economically sound for even a single specified variety of cotton mills, much less for the cotton manufacturing industry as a whole. Broad general principles may well be established and universally observed. But even in a group of mills as homogeneous in character as that producing carded yarns the variety of situations and circumstances is so great that no one specific approach to cost finding can be applied indiscriminately to all such mills, nor perhaps to any large percentage of the group.

"One mill may operate on a few staple numbers—another may produce a wide diversity of specialties. Most plants will be so scheduled that the productions and equipments of

"Regardless of any operation of the so-called law of supply and demand it is inconceivable that any satisfactory or stable market situation can obtain, except sporadically, when many mills enter the market either misinformed or totally uninformed as to the respective costs of their own individual items of production."
—Sydney P. Munroe

their various departments are continually in balance—other mills may have been originally equipped for certain purposes and subsequently have been forced to enter other lines of product with the result that a chronic lack of balance between their various departments obtains. Some mills—but not all—maintain a constant surplus of yarn finishing machinery to ensure greater adaptability for serving the needs of their customers. Some yarn mills may also manufacture cloth, consuming part of their own yarn and selling the balance, while others may own or may be owned by other plants which consume all of the yarn produced. Certain mills re-work waste from their high-grade product into an entirely different line of low-grade yarns, manufactured and sold on different principles. In one case a comparatively new mill may be operated by its original owners, while an older mill may be operated by individuals who have purchased it as a going concern. Some mills maintain villages—others do not. The general principles herein employed are adaptable to all these situations, but their specific application would necessarily vary with the particular conditions encountered.

"Accordingly, we most earnestly urge any mill management who may propose to develop cost data along the lines herein indicated to avoid promiscuously delegating such work to inexperienced or immature subordinates who have not had ample training and experience in this highly specialized work. The safest course in such a case would be to employ widely experienced outside cost consultants, securing thereby not only the perspective of an unbiased outside viewpoint, but also the wealth of experience such experts have accumulated in dealing with similar problems in other mills.

"We believe that the original expense of a cost installation so conducted will undoubtedly prove a handsome investment if a suitable expert is selected for the work. This involves no reflection on the personnel of the mill in question because the variety of circumstances which may be encountered is almost infinite, and each consideration should have a definite effect on the mill's approach to its cost problems. Proper adaptation to individual situations of the methods herein portrayed requires judgment and experience of a high order, and demands that the individual who undertakes to apply these methods to a specific case shall have a thorough understanding of mechanical manufacturing procedure as well as of managerial and sales problems, and also of this distinct and separate work of cost predetermination, and, as a rule, that he shall have had contact with the problems of more than a few mills.

"The Cost Section will welcome inquiries as to the specific application and adaptation to special circumstances of the methods we have depicted. Such inquiries may perhaps form a basis for supplementary bulletins which subsequently may be issued.

"It is our profound desire that all yarn mill managements will examine their cost methods in the light of the following demonstrations and of the 'Outline of Bases to be Used in Predetermining Costs for Guidance as to Sales Policies' which was published by the Institute in August, 1928."

Chlorine *Finds New Use in* Treatment of Mill Water

By Francis D. West

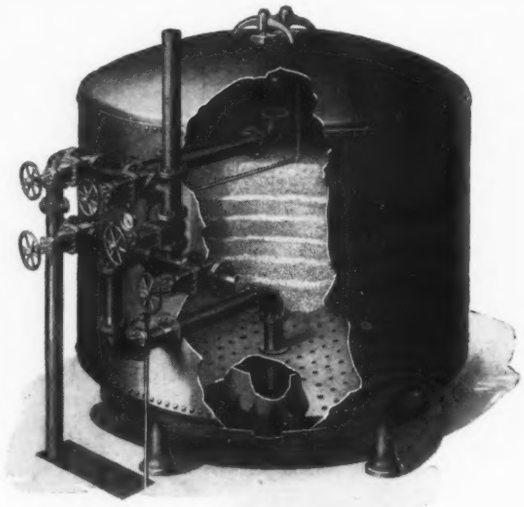
Manager of Sales, The Paradon Co., Arlington, N. J.

WHILE chlorine has been employed since 1907 for sterilization of drinking-water supplies, its use for treatment of industrial water is comparatively new. In fact, in this country, chlorination of water for the removal of slime from condensers of power plants has been practiced only for about two years. Treatment of water supplies for textile mills with chlorine is even more recent. It is not surprising, therefore, if the average textile man has not given thought to the use of chlorine in his mill, other than as a bleaching agent for textiles. Chlorine is not a cure-all; but in many cases it is a valuable adjunct to existing methods; and in other instances, where for any reason complete filtration systems are not feasible, it goes a long way in reducing troublesome conditions which are due to impure or polluted water supplies.

Since they require an abundant supply of water, textile mills have usually been built on streams, brooks, or rivers at points where large quantities of water were available at a low cost. Waste water, after a mill is through with it, usually is allowed to flow back into the stream; but it is then water plus dyestuffs, acid, alkali, soap, grease, fat, lint, wool, hair, and other impurities. Mills downstream have to use the polluted water from the mills upstream.

Evils of Polluted Water

Sometimes it appears that shortsighted mill men, as happened in a case forcibly brought to attention, even prefer to use wastes from their own mill as being cheaper than purchasing clean water from a municipal supply. Some years ago, a zeolite water softener was installed in a woolen mill on the Hudson River above Albany. The softener was small and was purchased for the treatment of the boiler supply, city water being used. After the softener had run for about a year, the manufacturer received a letter stating that the machine was no good, and if he did not make it work, it would be thrown out. It should be stated, in passing, that a zeolite softener, being a chemical rather than a mechanical filter, should always receive clean, clear water, if it is to function as it should. An investigation disclosed the fact that some one had conceived the brilliant idea of running a pipe into the Hudson River at a point about 10 ft. below the mill sewer and, in order to save the city water bill, they pumped this polluted water into the water softener. The mill dyed shoddy. When the softener was opened, the odor was overwhelming. The softener was covered with a foul-smelling black slime, wool fibers and grease. That is, of course, an extreme case.

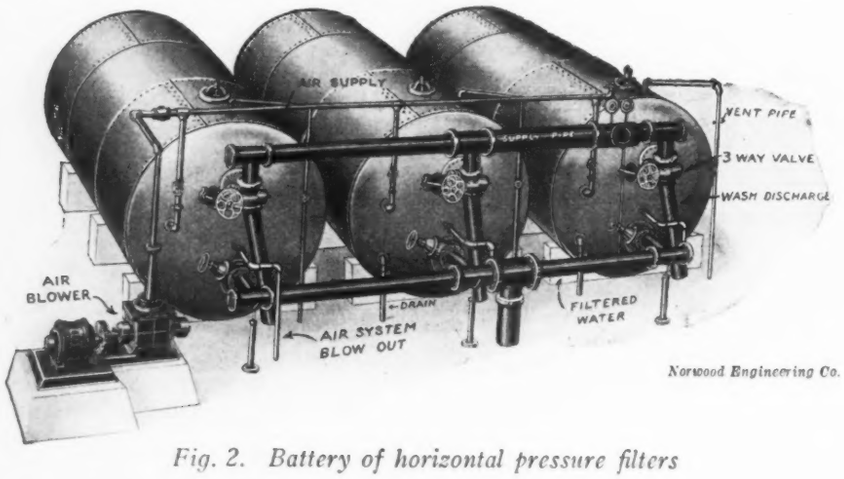


Graver Tank & Mfg. Co.

Fig. 1. Sectional view of vertical-type pressure filter

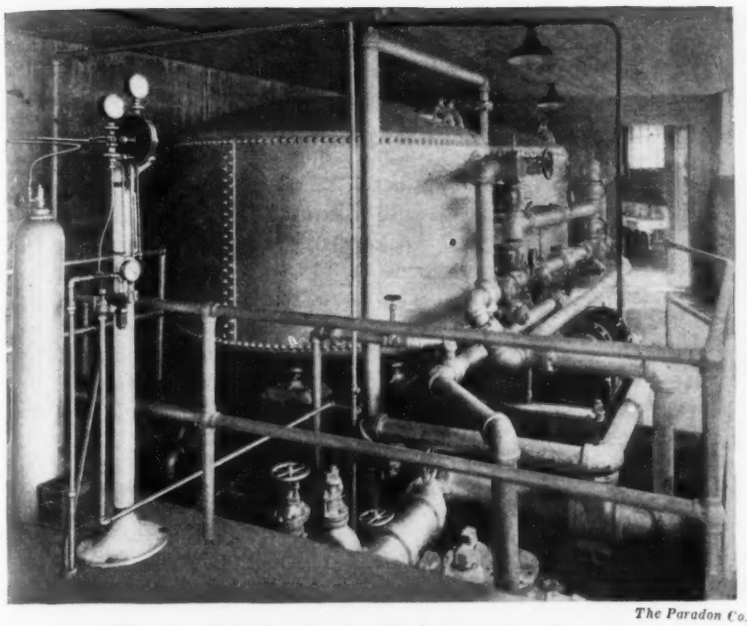
A second incident occurred in a plant located about four miles further down the stream. This mill was one of the most progressive mills in the country—a firm that turns out A1 products from virgin wools. It also used the zeolite system. In this case, several softeners were in service and the water was carefully filtered by mechanical filters to protect the softening units. The filters became fouled, and it was found necessary to boil them with steam and alkali to clean the sand grains.

In Rhode Island, carefully designed



Norwood Engineering Co.

Fig. 2. Battery of horizontal pressure filters



The Paradon Co.

Fig. 4. Solution-feed chlorinator showing connections to battery of vertical pressure filters

concrete gravity filters were abandoned and filters using terry cloth were substituted because the gravity filters were unable to deliver sufficient water. Here the operator mixed untreated water with the filtered water, as he had to have water of some kind. Fortunately for the mill owner, a textile engineer persuaded him to install a settling basin and chemical feeds, and the gravity filters were again put into service.

It is regrettable that many mills continue to use water as supplied by nature (water plus mud and silt), and added to by man (dyestuffs, soap, acid, etc.) until the water becomes so bad that something has to be done. As a boy in Philadelphia, the writer remembers swimming in Darby Creek at a point between two mills. Sometimes the water was blue or again a light green or a pink; but we boys used it, as did the lower mill.

The first step towards the improvement of a mill water supply is almost always the installation of a filter, usually of the pressure type. This move usually affords temporary relief; but after a short time troubles again start. At Great Barrington, Mass., a perfectly good pressure filter, some 20 ft. long, was out of commission because it could not be made to function. The mill was backwashing with river water. The plant was located a few miles below a cotton mill. Cotton fiber choked up the strainers and the filter would not work. An engineer advised them to empty the filter of sand and gravel, clean or replace the strainers, add new sand and gravel, and go to the slight expense of buying city water to be used for backwashing. The filter, today, four years later, is still in service.

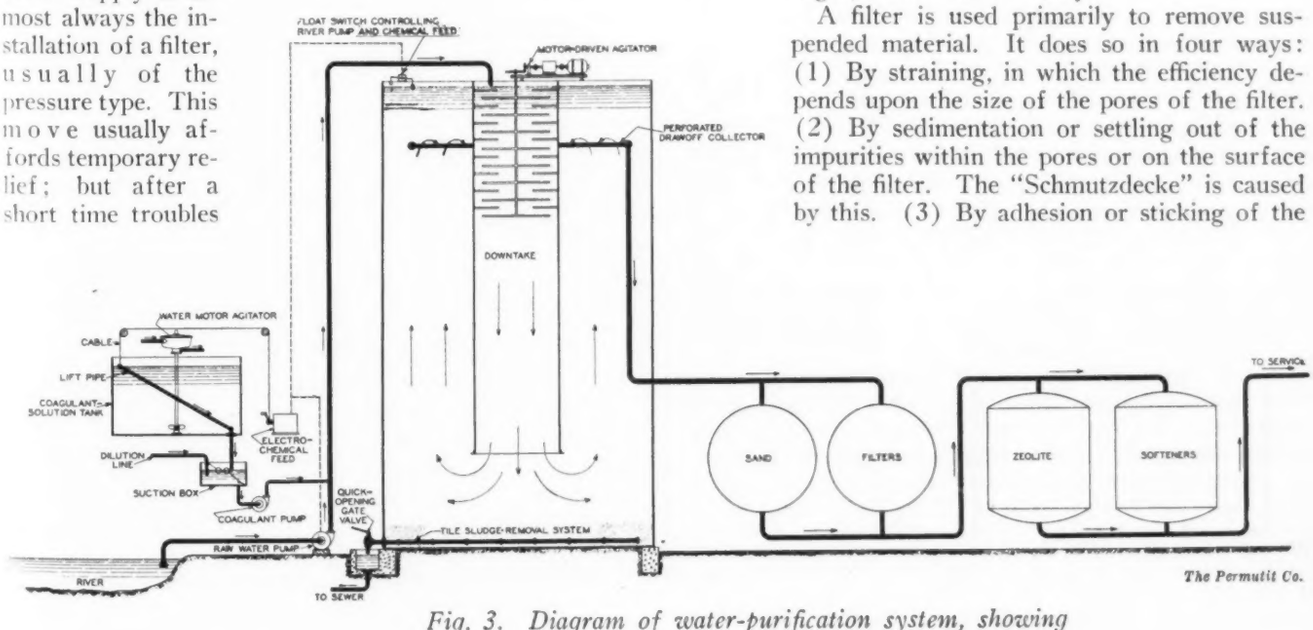
Mills are rapidly appreciating what it means in improved quality of their products; savings in dyestuffs, soap, and chemicals; and reduction of redyes and seconds by having properly conditioned water. Water of zero hardness—a water free from lime and magnesia—is being substituted for hard water. The zeolite filter manufacturers, in self-defense and to insure the satisfactory service of their machines, have educated the textile industry in the use of settling basins, chemical feeds, iron-removal plants, and filters. They are producing from rivers like the Merrimac, Passaic, Blackstone, and Chicopee, waters that are clean, colorless, and ideal for manufacturing purposes.

Chlorine Treatment Beneficial

But every mill is not ready or cannot afford the outlay necessary for such a plant and must struggle along with what it has; and even those who have complete treatment plants can operate these plants more efficiently and cheaply by the use of chlorine.

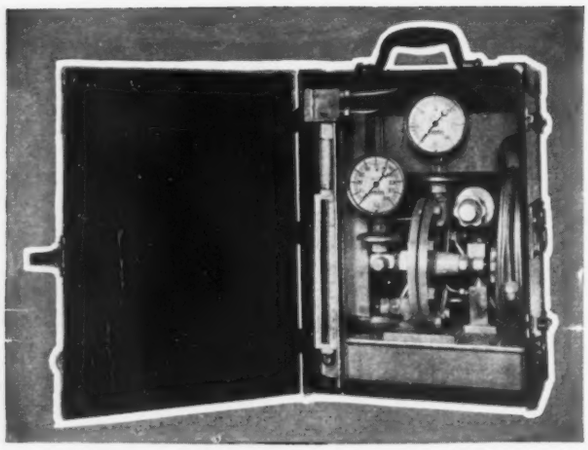
Let us take the case of a mill using straight filtration or filtration assisted by alum through a chemical feed. Just what happens in a filter and how does the filter remove the foreign material applied to it? First, let us consider the question: "What are the impurities and troubles with textile mill supplies?" Table I taken from *Mechanical Engineering,* May, 1926, on "Engineering Aspects of Treating Textile Water Supplies," by H. L. Tiger, states these clearly.

A filter is used primarily to remove suspended material. It does so in four ways: (1) By straining, in which the efficiency depends upon the size of the pores of the filter. (2) By sedimentation or settling out of the impurities within the pores or on the surface of the filter. The "Schmutzdecke" is caused by this. (3) By adhesion or sticking of the



The Permutit Co.

Fig. 3. Diagram of water-purification system, showing settling tank, chemical feeds, filters and zeolite softeners



The Paradon Co.

Fig. 5. Portable-type dry-feed chlorinator

impurities to the filtering substances or to other material already caught. This is important and together with sedimentation influences the fourth way, and (4) Biological and chemical action including oxidation and destruction of the organic pabullum and bacteria.

Filter efficiency depends to a large degree on four factors: (1) the size and uniformity of the sand; (2) the thickness of the sand layer, (3) the rate of filtration, and (4) the rate and effectiveness of the backwashing.

It is unfortunately true that the amount of foreign material the average mill filter is called upon to handle is too great in amount and of such a character that ordinarily backwashing does not clean it. The sand grains become fouled and packed together, mud balls form, the efficiency falls off, and the effluent becomes unsatisfactory and ill-smelling.

Action of Chlorine

Chlorine cannot completely overcome such conditions but it will go a long way in reducing them. Chlorine oxidizes the putrescible material, prevents the sand grains from becoming slime covered and, stops the effluent from becoming ill-smelling. It oxidizes any hydrogen sulfide; and in many instances, defers to a later date the time when a more complete filtration system must be installed.

A plant (not a textile mill) on the Delaware River below Philadelphia, where the water is tidal and badly polluted by sewage and industrial wastes, operates four horizontal pressure filters for the general factory supply (other than drinking water). Since the water is used by the employees in the washrooms, it is chlorinated after filtration. When the chlorinating treatment was first adopted there were numerous complaints of the odor of the water, especially the hot water. The point of application of the chlorine was changed to the inlet side of the filters. For a short time, conditions became worse, but on continued treatment, assisted by long backwashes, the odor vanished; the foul-smelling muck that covered the sand grains disappeared, and the filters became sterilized and no longer were breeding-places for bacteria, algae, and similar organisms.

Speaking of sanitary gravity filters handling a water not so very badly contaminated, J. F. Kingsley, *"Water Works and Sewerage,"* June, 1930, in "Pre-Chlorination of Filters," says in part:

The surface and wall cracking has been completely eliminated. When the bed is drained previous to washing, the sand presents a smooth and unbroken surface. It is tight against the filter walls and covered uniformly with a thin layer of coagulum. Under this, which can be demonstrated by scraping away the top layer, the sand is very clean and sharp. Mud-ball formation has been very materially lessened and those few balls that do occur are very small. When a bed is drained for inspection, after a wash the sand is like clean beach sand.

Pre-chlorination and filtration alone are insufficient for the treatment of industrial waters. Properly designed chemical feeds and settling basins or settling tanks should be used to pre-treat the water and reduce the load on the filters. In this case, as with filters, chlorine is of particular value. A settling basin becomes fouled, foreign material settles out, and bacterial decomposition frequently sets in if the basin is not emptied and flushed out.

In an interesting study under the subject "Pre-Chlorination of Water Supplies," Wellington Donaldson, "Municipal Index," 1930, states the advantages of pre-chlorination to be:

(1) Reduction of bacterial loading on filters, permitting better and more consistent over-all quality than is possible with effluent chlorination alone. (2) Increased factor of safety. (3) Improved coagulation, resulting in better clarity of effluent with lower residual iron and alumina. (4) Reduction of coagulant required. (5) Better color removal. (6) Prolongs filter runs with resulting economy of wash water. (7) Keeps sand beds cleaner in appearance and free from cracks and mud balls. (8) Control of plankton (microscopic life) in basins and filters. (9) Control of grosser biological growths in raw and settled water conduits, on basin walls, filter walls and gutters. (10) Defers putrefactive conditions in basin sludge. (11) Taste elimination, and (12) Reduction in operating costs.

John J. Quinn, in a paper, "Benefits Derived from Pre-Chlorination," presented at Knoxville, Tenn., January, 1930, at A.W.W.A. (*Continued on page 77*)

Table I. Impurities and troubles with textile-mill water supplies

IMPURITIES	TROUBLES CAUSED
Suspended Matter	
Inorganic (mineral)	
Sand and clay	Soiled yarns and cloth Scratching of copper print rolls Boiler deposits
Organic	
Living organisms (algae, etc.)	
Animal matter	Soiled yarns and cloth
Vegetable matter	Uneven dyeing
Sewage	Fouling of water supply system, pipe lines, dye vats and kettles, etc.
Industrial refuse	
Oil	
Dissolved Matter	
Gaseous	
Oxygen	Principal cause of corrosion and pitting
Nitrogen	No effect
Carbon dioxide	May accelerate corrosion
Hydrogen sulfide	Offensive odor
Solid	
Calcium and magnesium scales, i.e., hardness	Insoluble, sticky compounds with soaps, alkalis, and many dyestuffs Scale in boilers
Sodium and potassium salts	No effect
Iron compounds (inorganic)	Rust stains
Manganese compounds	Brown stains
Aluminum compounds	Color lakes with dyestuffs
Organic compounds of iron and other substances	Stains and unsatisfactory bleach

Single-Process Picking *Affords Yarn of Equal Strength and Slightly Greater Uniformity*

By Gilbert R. Merrill, B.T.E.,
Professor of Textiles, Lowell Textile Institute

✦ The accompanying article is reprinted from the latest issue of the quarterly Bulletin of Lowell Textile Institute, Lowell, Mass. Professor Merrill states that it is based on a study conducted by Harmon Howarth, a senior student.

THE purpose of this study was to compare the yarns spun from cotton passed through a single-process picker with those spun from the same cotton passed through two processes of picking.

With the exception of picking, the cotton was processed on the same machines, with the same settings, and, wherever possible, at the same time. All of the processing was carried on in the cotton-yarns laboratory, where the atmosphere is automatically controlled at 53% relative humidity.

In order that the laps should be produced under commercial conditions, it was arranged to have one of the large cotton mills, having both single-process and two-process pickers, prepare the laps. It was necessary to use a cotton available in this mill, which in this case was $1\frac{1}{8}$ in. peeler of low middling grade. All the cotton was opened through a hopper bale breaker and one vertical opener.

The two-process breaker laps were made on a two-beater picker having one three-blade beater and one two-blade beater. The finisher picker had a Kirschner beater. The single-process lap was made on a machine with two Buckley beaters followed by one Kirschner beater.

The plan called for a 30s carded yarn from single roving and 20s carded yarn from double roving, made under the following organization: picker lap, 12 oz.; card sliver, 55 grains; first drawing sliver, 55 grains; second drawing sliver, 55 grains; slubber roving, 3.75 hank; yarn, single roving, 30s, yarn, double roving, 20s.

A study of the laps received from the mill showed that the two-process lap was slightly cleaner than the single-process lap. However, the waste tests at the card showed 6.5% waste collected from the single-process lap, as compared with 5.9% waste collected from the two-process lap. (This would lead to the question of whether the excess dirt in the lap is removed in carding.) During the preparatory processing, attention was given to any possible difference in the way the stock ran. As far as could be seen, there was no difference in the processing qualities. The yarns spun were marked carefully to keep them separate, and were tested after five hours exposure at standard conditions in the automatically controlled testing laboratory.

One skein break was made from each of twenty bobbins for each count and each set. These tests were made on a Scott vertical tester of 150 to 300 lb. capacity, at a speed of 12 in. per minute, for the moving spool. The actual counts were determined from the weights of the broken skeins. Ten single-strand strength tests were made from each of the twenty bobbins, using a Schopper water-pressure tester, a 250-millimeter length, and a lower jaw speed of 12 in. per minute. As the single-strand tests were made, the elongation at the breaking point was recorded. The twists per inch were counted at ten places on each of ten bobbins to check the twist in the four sets of yarns.

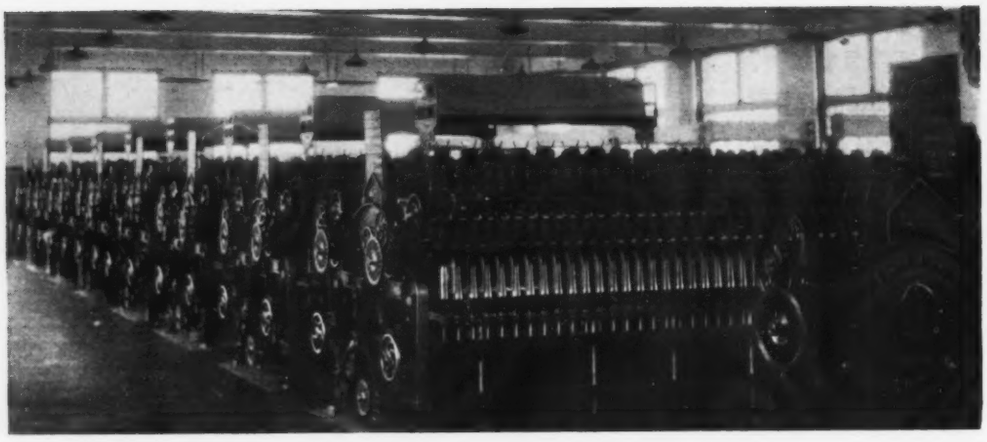
Another series of tests was made by use of the special equipment developed at the Cotton Research Laboratory to measure the variations in the single strands of yarn. The yarns were also wound on examination boards to get a visual comparison of the four lots.

The detailed data of this test are collected in 35 pages of typewritten figures, from which much of the following summary is obtained. The remaining figures are obtained from the others, and are used to make comparisons more accurate. For example, the twist multipliers have been found for counts 20 and 30 by using the actual twists per inch. The strength constants have been found by multiplying the actual counts by the strength of the skeins. This was done also for the single strand break. Within small limits, it is generally agreed that the counts times the strength of a yarn gives a constant which makes direct comparison possible. The variation in counts is taken from the figure obtained from the 120-yd. weighings. The variation in skein strength is similarly obtained and is introduced to go with the count variation and the variation from the mirror testing apparatus for single-strand variation.

SUMMARY OF DATA

Yarns	30		20	
Processes	2	1	2	1
Counts, actual	29.46	31.62	20.41	20.74
Twists, actual	23.80	23.10	17.90	16.80
Twist multiplier	4.34	4.21	4.00	3.76
Strength, skein	54.38	49.60	88.10	86.90
constant	1,602	1,568	1,798	1,802
Strength, single-strand	256	237	387	380
constant	7,541	7,494	7,899	7,881
Variation, counts, per cent	2.99	4.45	4.03	2.13
Skein strength, per cent	32.20	22.20	26.10	20.70
Mirror strand, per cent	17.10	13.90	14.30	13.50

The author of the study concludes as follows: (1) Waste in carding was 0.6% greater on the one-process lap than on the two-process lap. (2) Comparatively, the stock runs equally well throughout manufacture using either the one-process or the two-process laps. (3) The two-process and one-process yarns showed equal strengths. [In this connection note that for the 30s, while the strength constants for the one-process yarn were slightly less, the yarn had slightly less twist. For the 20s, the one-process yarn had a higher strength constant for the skein break and a slightly lower constant for the single-strand break, but the twist multiplier was considerably lower.] (4) By comparing relative elongations, no definite decision can be made, since the amounts were not consistent, but seemed to average about the same. (5) The one-process lap gives a little more uniform yarn. [From the skein weights the relative uniformity of the lots of both counts is contradictory; but based on skein strength and single-strand variation measurements the single-process yarn is more uniform.



Finer counts can be spun from solvent-scoured wool

Solvent Wool Scouring *Long Struggling for Favor* Receives New Setback

By L. M. Harless

In the accompanying article is traced the development of the interesting solvent method of wool scouring. Its important advantages have long been recognized, but certain obstacles have prevented its extensive adoption. Now the appearance of the economical Duhamel process seems, in the opinion of author, to halt any further progress in this direction. He believes, however, that the principles of the solvent process can be successfully applied to the treatment of yarns and piece goods.

THE solvent system of wool cleansing has engaged the attention of wool scourers and others for upwards of 50 years, but up to the present very little progress has been made on it. Many reasons might be given for this. For instance, the pioneers who first introduced solvents for taking out oil and grease from wool on a large scale used carbon bisulfide, which was a good grease solvent but which had many properties rendering it objectionable to handle. Some advance was made by the use of this solvent in the extraction of grease from bones and other materials, but one of the greatest drawbacks to the use of carbon bisulfide in wool cleansing was the difficulty in getting the solvent out. It had to be either vaporized or washed out, and at least the latter process was a difficult one. It was claimed at the time carbon bisulfide was used that water would give the desired result, but it did so only partially. When the material was washed out, a rather costly and very evil-smelling liquid mixed with water was obtained.

New inventions were brought out for volatilizing the solvent by means of steam, with the result that the wool, although perfectly degreased, was turned a very nasty color, which depreciated its value. Attempts were then made to wash out the solvent with hot water; but if the water was very hot, it gave results similar to the steam.

A real advance was not made until that particular solvent was discarded; and others were substituted, such as gasoline, benzene, ether, and crude naphtha. Over 100 patents were taken out at about that time for cleansing wool by volatile solvents. Among that number those which were striking and practicable could be brought down to a half dozen. Some inventors aimed at making the process continuous, as in emulsion scouring; and this idea to some extent retarded the real advance. It is difficult to employ in a continuous process a solvent which costs so much more than water and which must be recovered.

Advantages Claimed

The great advantage then claimed for this process was that the wool would be much better for the later processes, especially the spinning. It was also claimed by those who had used the process that a large grease return was obtained. The wool had characteristics of its own, and there was less noil in combing.

There are three main substances in wool impurity—viz., the wool grease; the wool sweat; and the sand, dirt, etc., attached to the wool. At the time the solvent process was first found to hold possibilities, many arguments regarding it were advanced, pro and con. The emulsion system of cleansing answered very well, it was asserted, and would remove all the impurities at once, if properly performed; but this process was not always properly car-

ried out. If done under suitable conditions, satisfactory results were obtained. All were agreed that by inattention to temperature, amount of alkali present, etc., the wool could be easily damaged; whereas, with proper treatment with solvents, there was very little chance of spoiling the wool. On the other hand, it was pointed out, there were risks to be faced which had been drawbacks in the past; the solvents used were all very inflammable and any vapors coming from them were very explosive when mixed with air.

It was therefore mainly due to the fact that solvents do not damage wool that interest was taken in the new process. The wool grease could be taken out with solvents without entangling the wool. Of course, it was said that if all the grease were taken out of the wool, the fiber would be deteriorated. If all the surface grease were taken away, there was little cause for complaint; but if the grease were taken from the fiber interior, the wool would be given a harsh feel. This took place in emulsion cleansing when a scour which was too hot or too alkaline was used.

A suitable way to treat wool was found to be in a closed system; so that, after extracting the grease, the dirty, greasy solvent could be completely removed by mechanical action, and afterwards the suint and dirt could be washed out in the ordinary scouring machine. Experiments showed that this was the best method, but it was capable of many variations.

Hydro-Extractor Type

One machine used was similar to the hydro-extractor. The outside casing contained liquids, and the inside casing was perforated and could be revolved on a central shaft at a high or low speed. The inner cage had four compartments, with a door at the end which opened opposite to the outer door of the casing. The wool was packed into the inner cage and the machine closed up tight. The air was drawn out and the solvent was allowed to run in to a certain depth saturating the wool. As soon as the wool had been thoroughly saturated with solvent, the grease was in a perfectly homogeneous solution, and what was necessary was to drain it off. A small quantity of solvent would be left on the wool, and a similar proportion of grease would be left in.

Where wool was deficient in grease, it was found that it could be made more greasy if necessary. That could be done to meet the objection that the solvent took out more grease than it ought to, and the wool was no better on that account. It was also discovered that the solvent process allowed a bigger percentage of potash recovery than could be obtained by other means.

By working the process on the closed system, risk of fire from inflammable solvents and of explosions was avoided. All pipes and tanks and the machine were connected and contained an atmosphere composed of solvent vapor mixed with flue gas.

A process has been evolved in which burry wool straight from the bale is steeped in and passed through acid of similar strength to that used in carbonizing. The wool is then dried with grease in it. Afterwards it receives the crushing and willeying, much of the grease and dirt also being removed. No felting action is started, with the result that the wool comes out very open and can be cleaned by either a wet or dry system.

One of the greatest drawbacks to the solvent process in the past has been the production of emulsions in washing out the solvents. Many of the most promising processes of the past have failed on account of this difficulty. If the solvent were taken out, the degreased wool could be treated with water. This was made possible by the process described. With the solvent process, waste that is produced so largely in the wool trade, more especially in the woolen trade—waste which has been fast or embedded in machine parts, due to the presence of waxy, limy substances, and which is otherwise of no further use except as a fertilizer—can be successfully treated. Such waste contains good material, almost all fiber, and should not be used as manure.

The solvent method of cleansing could be used with success in treating yarns and piece goods. In the case of piece goods, combinations of wool that have not been successfully handled in the past on account of the difficulty in scouring could be treated by this method. There are many combinations and designs which, on very slight scouring, became blurred and shaded. This could be avoided in the case of pieces on which a felting effect is not desired, by degreasing the pieces in a solvent.

The solvent system is receiving a check by the recently introduced Duhamel system of cleansing. Although there are only a handful of combers in England practicing this method of cleansing at present; because of their importance and the surprisingly economical results so far obtained, many more combers are likely to become influenced. The most recent development in this new process is the abandonment of the slow centrifuge, and the use of the second and fast centrifuge as the only one required for recovering the richly laden suinty water for further use in wool cleansing.

Solvents may be applied to piece-goods scouring

The Spooler Heart Cam—

Maintaining Its Efficient Operation

By L. L. Kingsford

IT IS because of lack of understanding of the method of making skillful adjustments on the heart-cam type of traverse drive that one finds so many poorly built and tangled double-headed spools in some spooling departments. Too many times do we find spools that are run over at one head and not filled in enough at the other; spools that are run over at both heads; and spools that have the traverse so short that they are in the condition called "cut in"—a condition that inevitably means entanglement of the yarn at the heads.

All of these faulty builds of spools, and others that crop up from time to time, are potential waste makers. Furthermore there is a costly loss of time in fixing the defecti spools—a loss which is occasionally sidetracked by the workers through the simple expedient of cutting off the whole of a troublesome spool into waste when the section hand is not around. Where an honest effort is made by the workers to run such faulty spools, there is so great a breakage of the yarn at the badly built heads that the product will be full of knots. All in all, poorly built spools are bad business.

All of this irregularity of spool building can be eliminated if the principle of the heart-cam drive and its accessories is understood, the knowledge made use of, and the procedure followed up for continuously good results.

Important Parts of Drive

The accompanying sketch shows the important parts of the heart-cam traverse drive. The mechanism is simple and requires no detailed description. The heart cam *HC*, revolving on the axis of its shaft *SH*, brings about the up-and-down motion of the guide-rail *GR* by causing the rocker arm *RA* to rise or fall. The extent of this movement of the rocker arm is the basis of the correct traversing of the guide rail, so that the latter will guide the yarn between the two heads of the spool *SP* in such a manner as to make a perfectly built package.

The rocker arm *RA* must be securely fastened to the rocker shaft *RS*, to which are also fastened all the lifter-rod arms *LRA*. Only a right-hand lifter-rod arm is depicted in the sketch. The rocker arm should also be provided with a slot *SL* at the end farthest from the shaft *RS*. It is the location of the dog *D* along this slot which controls the extent of the movement of the rocker arm and of the guide rail *GR*. To lengthen the journey of the latter, the dog *D* must be moved inward toward the shaft *RS;* whereas to shorten the movement of the guide rail, the dog must be brought farther from the shaft.

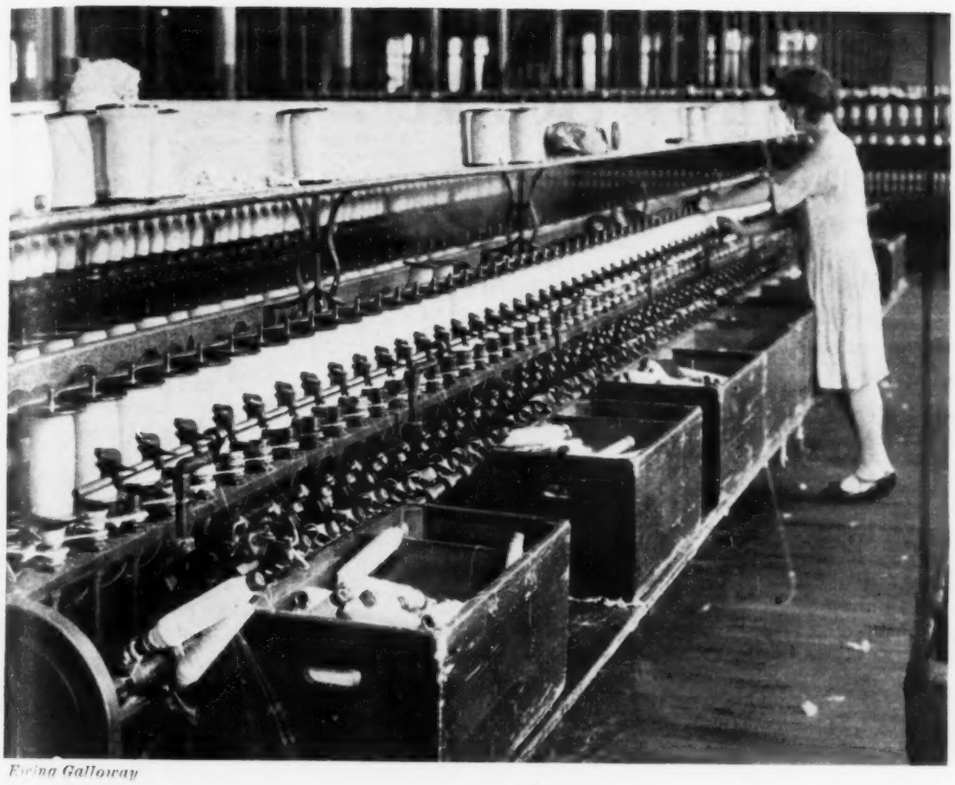
A study of the arcs described by the end *E* of the rocker arm when the dog is in different positions along the slot will show that the greatest sweep occurs when the dog is at the innermost end of the slot. Once the correct distance has been found, a nick should be filed on the rocker arm, so that, if it is necessary to remove the dog *D*, it can be properly re-located.

It may happen that the contact between the point of the heart-cam and the cam bowl *CB*, located at the upper end of *D*, is not such that the guide rail works at its best. In such a case it may be necessary to move the brackets which support the heart-cam shaft slightly forward or backward until a satisfactory point of contact has been established.

The dog *D* is generally made in two styles. One consists of no more than one piece, slotted at the part which fastens against the rocker arm. The other consists of two parts, one of which is so shaped as to make a good connection with the slot in *RA*, and the other—which is provided with a slot—is fitted into the first section. The latter is provided with an adjusting screw and nut, by means of which a perpendicular adjustment can be given the second section.

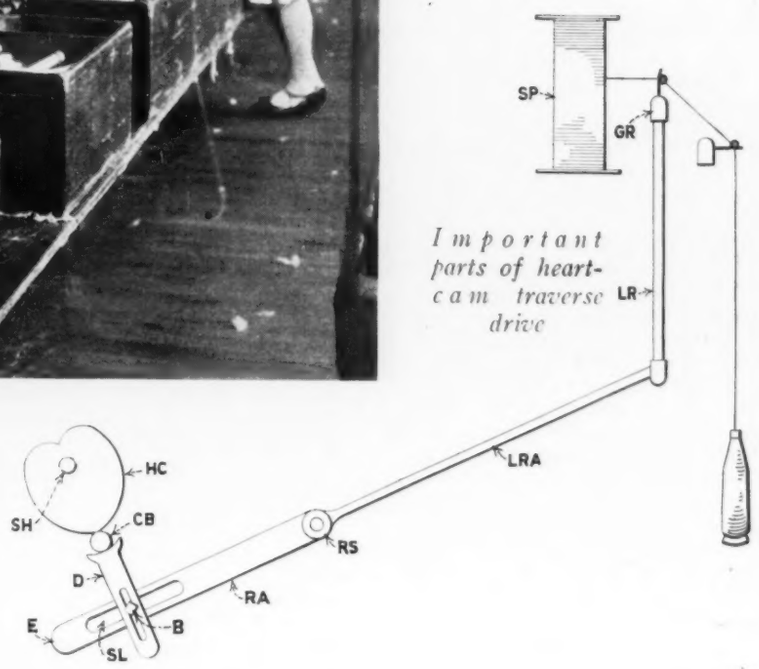
Usually, in the changing of the position of the dog on the rocker arm, the movement of the guide rod *GR* is somewhat disturbed. The previous movement is restored by moving the adjustable part of the dog up or down as the need may be. Raising it will cause the rocker arm to be depressed more, with a resulting higher movement of the lifter rod arm, the lifter rod, and consequently the guiderail. Lowering the dog will bring about the opposite result.

Of great importance is the absolute solidity of *D* on the rocker arm. The bolt and nut *B* should hold the dog securely in place. Either a heavy spring washer should assist the nut on *B* in maintaining this necessary fixity,



Ewing Galloway

Proper adjustment and maintenance of the spooler heart cam insures satisfactorily wound yarn packages



Important parts of heart-cam traverse drive

or a double nut should be used. A heavy wrench should be employed when tightening the nut, because the slightest looseness would soon result in disturbing the setting of the dog.

When Cam Shows Signs of Wear

In the course of time, the heart cam may show signs of wear. This is often first detected in the shape of the spool. There is a ridge here or there, or a hollow spot at some place. An expert in filing may sometimes touch up the heart, so that good results will again be obtained. More often a new cam has to be substituted. It is well before putting the new cam on the shaft to check it against its template.

Since so much depends upon maintaining the standard shape of the cam, it is advisable to have the face case-hardened. The bowl *CB*, however, should not be hardened, as it is easier and cheaper to replace a bowl than a cam. Should the point of the cam wear, and it certainly is subject to great strain, the cam can be removed from the machine and the point retouched carefully by a skillful filer. Before it is put back in place, the point of the cam should be checked for correct location, as the wear may move it slightly from its original position, and it should then be hardened.

The heel of the cam, too, may show signs of wear in time, a condition which is reflected in a lumpiness on the spool. Expert filing, followed by a re-hardening, will in the early stages give good results. Obviously, when the touching up of a cam does not bring the desired results promptly, it is best to substitute a fresh cam, since the filing of a heart cam to correct shape is often a most difficult task, entailing a greater expenditure than a new cam. A good plan is always to have one or more new cams on hand for emergencies.

When a cam has been returned or fitted to the shaft *SH*, and the bearings of the latter are being tightened, it is well to twirl the cam occasionally as one tightens the bolts. Freedom of the camshaft is essential for the correct operation of the train of motions involved.

As was previously stated, a longer spool traverse is obtained by moving the dog *D* toward the rocker shaft *RS*. However, when a larger spool is about to be used which has a traverse considerably longer than the old spool, the extension may be greater than can be attained through any adjustment of *D* on *RA*. It is then necessary to use a larger cam.

To acquire the necessary technique for making correct traverse adjustments on *D* with the least loss of time and disarrangement of the motion of the guide rail requires actual practice. With experience, however, there soon comes that intuitive ability of foretelling just how much shorter the actual distance covered by the guide rail *GR* must be than the distance between the heads of the spool *SP*. This allowance is a vital factor in the correct building of a spool and varies according to the size of the yarn. The object is to give a rounding effect to the ends of the spool when it is filled, so that the maximum amount can be put on without the danger of the yarn sloughing over the heads of the spool.

Coarse yarns require more space than fine yarns, but just what amount to allow in each case can usually only be determined by trial and error. Experience in time gives one an idea as to just how much to allow, so that the adjustment often is correct the first time—or is so close that only a slight further adjustment is required.

The Buyer's Viewpoint . . .

Edited by Miss Lillian Edgerton, research counselor, of New York. Readers are invited to offer comments on the subjects treated or to submit questions regarding defects which contribute to the "returned goods" evil in retail circles, and which can be traced back to manufacturing faults.
—Editor

Where Does Merchandising Belong?

WHY not do more direct merchandising from the manufacturing angle? The manufacturer knows the characteristics and qualities of his own merchandise better than anyone else. Why not pass this information on to the retail merchant and consumer? This applies to the yarn as well as to the fabric group.

Huge sums of money are expended annually on improving fabrics, testing fabric constructions and color fastness, devising new uses for fabrics. Why not use the results of these tests fully to the best of their advantage?

To the manufacturer who knows just what his merchandise will do, its virtues and faults, there seems to be little room to question its superiority, but there are so many similar fabrics made for the same purposes, about which there is so much selling conversation, it is not a little difficult for the buyer to separate the good, not so good and unserviceable.

Many of these fabrics were made with little or no thought as to their serviceability for any purpose. The proof of this is in the volume of adjustment returns on merchandise which has not given satisfactory service. A fabric made for a definite purpose and with characteristics which will make it entirely suitable for that purpose deserves recognition.

More power to those firms planning for the coming year definite merchandising programs, which will in a practical way carry their message concisely and directly to the sources of distribution.

The Real Test for Silk Crepe for Dresses

SILK crepe to be used in spring and summer dresses is likely to be laundered more often than fabrics used for fall and winter garments. Therefore more attention is usually paid to its successful laundering qualities. Unfortunately, the one quality which seems to command the greatest attention is that of the fastness of the dyes to home laundering. Of what value is a perfect dye if a dress shrinks three sizes the first time it is laundered? Or if the threads shift so easily as to make the material impractical for dresses made in the modern silhouette?

The amount of shrinkage and the easily shifted threads need attention this season.

Fabrics for Uniforms

UNIFORMS are required to be well-tailored and to lend themselves easily to cleansing and pressing. The fabrics should then be of such fiber and construction as to fulfil their peculiar duties. The following suggestions have been made by some who purchase uniforms for elevator attendants and porters:

1. The materials for uniforms to be worn inside of buildings must absorb as little as possible of grease and common soil.
2. They must hold a crease and look always freshly pressed.
3. They must be so firm as to withstand the constant friction without wearing fuzzy or threadbare.

These ideas are not new, but they deserve consideration.

Rayon and Worsted Combinations

THERE is an increasing production of fabrics in which rayon has been used in the warp and worsted in the filling directions. Some of these fabrics are advertised as washable—rather a doubtful promise.

The most outstanding difficulty, however, is the fact that many of these fabrics are too harsh and rough on the inside. The modern offices and apartments are so warm and the women are accustomed to soft fabrics which will not irritate the skin. That rayon-worsted fabrics *can* be finished in a way which makes them soft and pleasing to the touch, is proved by the fact that many such fabrics now on the market do possess these characteristics. The exercise of care in finishing them will prove to be a profitable investment.

Coat Linings Made from Synthetic Yarns

THE synthetics command attention in the lining field. Every price and quality imaginable is out for sale. The lining which will win in the race for supremacy will be the one which:

Botany Worsted Mills

J. P. Stevens & Co.

A few of the garments displayed at the Wool Institute

1. Best fulfills the demands of wear and appearance.
2. Will always be uniform in its quality, finish and performance.

It is necessary then to check constantly the finished cloth, not by a few tests in a small area of the cloth but over the whole width, and a number of tests in the warp direction. There is a bit of a tendency to advertise the strength of the lining. This may lead to difficulties. Recent experiments show that in the finished cloth, the strength may vary appreciably across the width. Which strength is best to advertise, the low, high or medium? Is the medium in one section of the cloth, the same medium in another?

▼ COMMENT FROM READERS ▼

Mohair Pile Fabrics

Editor, TEXTILE WORLD:

In the Nov. 29 issue of your esteemed magazine, appears an article entitled "Mohair Pile Fabrics for Furniture," which in effect severely criticizes the manufacture and use of mohair fabrics for upholstery purposes.

With all due respect, we feel that some of the statements made in this article indicate a lack of opportunity to see recent style and quality developments in mohair fabrics—which may be the fault of the textile manufacturers.

We believe it is an entirely mistaken idea to say that mohair plushes "lack the style necessary for modern furniture." New styles are constantly being created by mohair plush manufacturers to meet up-to-date and modern demands by the furniture makers, and we believe a survey of patterns and styles now being produced would convince the public there is little difficulty in satisfying its needs or desires for new up-to-date fabrics.

A report just received from Paris states that among the new fabrics are mohair plushes in plain, with various types of design and finish. Moreover, in this style center of the world mohair plushes are much in evidence in the better hotels and high-class public buildings.

As to moths: Months ago all members of the National Upholstery Textile Association agreed scientifically to treat their mohair fabrics with an approved repellant, and this may be depended on with all plushes so treated. In fact, one of the largest mohair plush manufacturers and one of the large furniture manufacturers have stated that they have yet to learn of the first case of moth trouble with fabrics so treated.

It is true that mohair plushes which were sub-normal have appeared on the market. Such fabrics have undoubtedly developed so-called "bald spots"—but had the material been selected by the purchaser with a view to quality, the goods so chosen would have probably withstood all practical uses and proved a continuing satisfaction.

The industry realizes the importance of eliminating low specification mohair plushes and of producing only such fabrics as will be satisfactory and give good service and value to all purchasers. Energetic efforts in this direction are now engaging the active attention of the industry, and if your readers will extend their cooperation by carefully selecting the quality of mohair plush purchased, we believe this "Queen of the Fabrics" will rapidly regain favor.

The suggestion in your article that it would seem advisable to eliminate low grade fabrics and wholeheartedly support the production of mohair pile fabrics which will give service and contribute to the attractiveness of the modern home is certainly worthy of support,—and if this spirit of cooperation on the part of your readers and the general public be followed, the desired results will be rapidly obtained. The manufacturers are today doing everything possible to help along this good work.

W. P. FICKETT, Executive Secretary,
NATIONAL UPHOLSTERY TEXTILE ASSOCIATION, INC.

Our Answer:

Thank you for your interesting letter of Dec. 26 commenting on item entitled "Mohair Pile Fabrics for Furniture," which appeared in our Nov. 29 issue.

As you will note, the criticisms of mohair fabrics for such use, as given in this item, were the reasons advanced by retail buyers for the alleged decreasing popularity of such fabric for such use. The purpose of the department "The Buyers' Viewpoint," in which this item appeared, is to give just this sort of reaction so that textile manufacturers may know what retail buyers think of their products and may take steps to correct any misunderstanding which they feel exists in the minds of retail buyers, or else to remove defects which they feel do exist and which have been fairly the subject of criticism.

For that reason, we are more than glad to have your statement pointing out that manufacturers of mohair pile fabrics are taking such constructive steps to enable them to offer fabrics which are subject to none of the criticisms listed. We feel that your comment on our item should be given the same publicity as the original item was given and we take pleasure in printing your letter in connection with "The Buyers' Viewpoint." We hope that this will be helpful in informing those people who may be classing all these fabrics in one group, and also to such manufacturers as may not have followed the constructive lead of your association. We want again to thank you for your courtesy and interest in submitting this comment to us. It is only in this way that we can secure well-grounded opinions on such important matters.

Editor, TEXTILE WORLD.

J. P. Stevens & Co.

Botany Worsted Mills

style show held under the auspices of Boston in December

Too Much Debasement of Rayon Crepes

Editor, *The Buyer's Viewpoint:*

If rayon crepes expect to hold the field and be in popular demand this coming spring, special attention should be given constructions as it seems today everything is rayon crepe.

There has been too much debasement of this fabric by converters and manufacturers and with silk so low this cutting of constructions will be injurious to the trade.

Considerable attention should be given to shifted threads as this is an evil that can easily be avoided by careful manufacturing and finishing this fabric.

The writer believes that there should be a printed folder at all large department stores referring to the laundering and cleaning methods of rayon crepes. WEAVER.

OVERSEERS' ROUND-TABLE

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Employing Relatives?

Editor, Overseers' Round-Table:

THE POINTS in favor of an overseer hiring his relatives are, I believe, easily outweighed by the disadvantages which invariably arise.

The fact that a relative of the overseer is in the department can never be disguised. It is one of the first things a new hand is made wise to. The relative may be a good fellow, but he is "branded." Every department has difficulties in regard to help and for an overseer to become cognizant of the underlying current through relatives is more theoretical than practical.

Forgive my using a hackneyed phrase, but let us face the facts: "Blood is thicker than water." A very natural blessing to the family, but wherever possible the blood should not be mixed with the water. SEER, Canada.

Wages vs. Mill Operation

Editor, Overseers' Round-Table:

I LIKE to receive, and see others receive, a high wage. However, the wages which an employee receives depend not only on the money he earns per hour, day, or week, but also on the continuity of employment. If a man receives a high rate per day but is being continually laid off he may easily receive less than he would when working full time at reduced wages. Under these conditions I consider a wage cut would be justified.

From the company's point of view full time on a wage cut would be a great advantage in saving overhead.

I think that the price which can be secured for the product should always be considered when fixing wages.

W. E. WARNER, England.

Editor, Overseers' Round-Table:

WAGE REDUCTION is too serious a matter to be tinkered with and should never be practiced unless economic conditions make it an absolute necessity. To cut wages for the sole reason of keeping men on full time, for the present at least, is like putting a patient under morphine to make him forget his pains for the time being, without going to the source of the evil.

If the depression is just a minor one, caused by changes in style, etc., curtailment of production, followed by readjustments, is the thing to do. No wage cut would be justified and is, therefore, not permissible. However, if the depression is a major one, which studies of previous depressions show is always accompanied by price slashes, wage reductions are unavoidable and fully justified. High wages are wonderful and tend toward prosperity as long as they do not represent more than their fair share in the cost of production and are in accordance with the cost of living. Otherwise they lead to reckless spending, which is one of the main causes of depressions with their disastrous results. F.A.R.

Editor, Overseers' Round-Table:

I DO not think it is a very good plan to cut wages just to insure a few months' steady work. I am not a believer in wage cuts unless there is no other way out. It is far better to get your cost down some other way.

I think the help would much rather have more work to do and keep the same pay. There are also a few corners that can be cut to get the cost down.

As Pete says, there is just a certain amount of business and it wouldn't be long before you were back where you started—if not in worse shape. R.K.C., Canada.

How Full Should Super's

"NOW that the holidays are over," Superintendent Chase addressed the overseers, "I'm going to ask you to discuss our relations pretty thoroughly. I have a job to do in running the mill and I'm anxious to have your thoughts on the best way to get things done. Now, from your point of view, do you think that I can get the best results by just telling you men what I want done and letting you do it in your own way or do you think it better for me to tell you what machine settings to use and other things like that?"

"You know that there is nothing personal in what I say, Boss," Bill spoke up, "but give me the super every time who just tells you what results he wants and lets you go ahead and get the results any way you want. I know enough about my job so that I don't need anyone to lead me around by the hand. If the super gives full explanations all the time then it doesn't take much brains to be an overseer. No super can know everything about every department and if he attempts to tell the overseer how to run the job he has to get a lot of stuff out of books and half the time a good overseer knows a better way to do it. If the overseer doesn't know enough so that the super doesn't have to spend time telling him how to do everything then I think there ought to be a new overseer. My idea is to get good overseers and give them a lot of responsibility. The super has enough to do without bothering himself and the overseer with a lot of unnecessary details."

"I'm going to be the one to disagree with you this time, Bill," Hank took the floor, "because I think that you are entirely wrong. The super is the super because he knows more and can think clearer than the rest. I think that he should spend a lot of time going around and talking with the overseers and giving them the benefit of his knowl-

Instructions Be?

edge. The trouble with a lot of overseers is that they are in a rut and do things in the same old way they always did. The super is usually more alert and he is the type who keeps up on the latest developments so I think that he should be the one to decide what machine settings should be used and such matters. What is the good of having the overseer stumble along and use a setting which has just sort of been handed down to him when the correct setting has been obtained by scientific investigation? The overseer has plenty to keep him busy and I think that the super who tells the overseer as much as he possibly can exactly how a job should be done will get along a lot better than the super who just tells the overseer what he wants done and lets the overseer muddle through as best he can."

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Do *you* think that the super should tell the overseer how to run the work, or should the overseer just be told what results are wanted and allowed to use his own judgment?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

Editor, Overseers' Round-Table:

I HEARTILY agree with Pete about high wages. I have worked in several mills and the ones that paid high wages are still running and those that paid low wages have long since gone on the rocks. The old saying, "cheap help, cheap work" still holds good. Satisfied help is the best asset a mill can have. The worker generally knows about what he or she is worth and works accordingly. This is also true of an overseer.

Too many mills have the notion that low wages are a panacea for all the ills the textile industry is heir to, while, on the contrary, they are a breeder of discontent. A mismanaged mill is always prone to "cut" the pay, thinking thereby to make ends meet, whereas if they knew the game, would listen to their overseers and keep wages up where they belong they would be on the road to prosperity. If you want contented help and good work, pay decent wages. You do not have to "drive" such help. On the other hand the low paid worker is just doing enough to get by, is always looking for a new job and labor turnover is high.

That talk about "if we can cut wages we can run steady" is just a lot of "boloney." Another thing is also true: a new superintendent who cannot make good invariably wants to lower wages. Then, to use Andy's words, he is in a mess, has the help down on him, gets poor work and dissatisfaction. We are burdened with too many poor superintendents who are getting by on a "bluff."

I would say, keep wages up and keep the help satisfied. Labor and Capital are a 50-50 proposition and the one that oversteps will sooner or later be brought to account.

ANOTHER OVERSEER.

Small Stores in the Mill

Editor, Overseers' Round-Table:

I AM very much in favor of the company not running a candy stand, but rather a supply wagon on wheels that would go through the plant twice each day. Every well laid out plant has a main alley and the help could stay close to their machines and be supplied with a little refreshment with practically no lost time.

I was with a 125,000 spindle mill in the south a few years ago and a supply wagon came through the mill twice a day, leaving the ground floor at 8:30 a.m. and 2:30 p.m. with ice cold soft drinks, sandwiches and 5c. candy. This wagon was managed by the cafeteria and was a whale of a success of course. We old fellows could get a piece of "Brown Mule" or a piece of "Apple" to chew, as long as we were careful where we planted the "juice." W. D. CRAWFORD.

Editor, Overseers' Round-Table:

I AM absolutely against the idea of any stands in a manufacturing plant. A business is either manufacturing or mercantile. Have seen plants where stands were located, or certain operatives allowed the privilege of selling, and this took up the time of both the operative and the other employees, what with going back and forth and the time consumed in eating.

The more employees in a plant, the more time lost. Any employee wanting candy can secure it the night before or on the way to work in the morning. G. W. SHEELEY.

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Summary of Discussion on Wage Reductions and Full Time

The question of whether it was advisable to cut wages to secure full time operation, for a time at least, brought out a great deal of sound economic thinking. The great majority of the replies, actually 84%, stated that a cut in wages should be put in effect only as a last resort, and that a cut on the basis of a full time operation promise brought only temporary relief and actually made matters worse in the long run. The consensus of opinion was that general industrial conditions did not justify a cut of any kind at this time. The 16% who believed that a wage cut, coupled with a promise of full time operation, was acceptable based their views on the premise that an individual operative would be foolish not to favor anything that would bring in more money and alleviate suffering.

NEWS about MEN

✦ D. W. CHALMERS, president of the Chalmers Knitting Co., Amsterdam, N. Y., was elected a director of the Montgomery County Trust Co. at the annual organization meeting.

✦ H. R. STEPHENSON, president, Southern Bleachery & Print Works, Inc., Taylors, S. C., entertained officials, superintendents and foremen of the Piedmont Print Works division at a banquet in the Chick Springs (S. C.) Hotel, Jan. 3.

✦ SPENCER A. REED, former president and treasurer of the Athol (Mass.) Mfg. Co., has been elected a director and clerk of the corporation of the E. H. Roberts Co., Orange, Mass.

✦ D. J. COSGRO, president of the Sangamon Mills, Cohoes, N. Y., will head an independent ticket in the next mayoralty contest in that city and organization plans are now said to be under way.

✦ EDWARD J. BRADY, president of the Waucantuck Mills, Uxbridge, Mass., has been appointed a member of the finance committee of that town.

✦ L. W. ROBERT, president of Robert & Co., Atlanta, Ga., textile consultants, and director of the Georgia Technical Athletic Association, of Atlanta, is in New York attending the national meeting of United States Football Coaches.

✦ GEORGE D. HORST, of Nolde & Horst Hosiery Co., Reading, Pa., served as chairman of one of the relief committees for the unemployed, and with his family contributed over $2,000 to the fund.

✦ JAMES G. MERRIMAN, former president of the Oswego (N. Y.) Yarn Co. before its merger with the Dyersburg (Tenn.) Cotton Co. and now an officer in the latter company, spent the holidays in Oswego, accompanied by MRS. MERRIMAN.

✦ JOHN SPRUNT, a stockholder and director of Durham (N. C.) Hosiery Mills, and MRS. SPRUNT have given to the city of Durham 45 acres of land for park purposes, including a small golf course and clubhouse.

✦ ERNEST E. WHISNANT is president and C. L. WHISNANT is secretary and treasurer of the Whisnant Hosiery Mills, Hickory, N. C., which was formerly the Highland Hosiery Mills. The plant operates 125 knitting machines.

✦ JOHN H. CHEATHAM, president and treasurer, Georgia-Kincaid Mills, Griffin, Ga., has been elected chairman of the board of directors of a new bank formed by a recent merger of the First National Bank of Griffin with the Griffin Banking Co. The new institution opened for business on Dec. 29.

✦ AUGUST HAEBERLIN and NOWMAN S. CASSEL have been elected vice-presidents of Textile Dyeing Co. of America, Inc., Hawthorne, N. J. The following were elected to the board of directors: ROBERT WYDER, president and treasurer; CONRAD HIRZEL, secretary, and the aforesaid vice-presidents.

✦ W. M. MCLAURINE, secretary of the American Cotton Manufacturers Association, delivered the feature address at the annual dinner and get-together meeting of officials, superintendents, overseers and section men of the Chadwick-Hoskins Co., held in the Chamber of Commerce Hall, Charlotte, N. C., Jan. 3. More than 175 men from the company's plants in Martinsville, Va., Charlotte and Pineville, N. C., were present. B. B. Gossett, president of the mills, acted as toastmaster.

Ernest C. Morse, assistant to the vice-president, American Bemberg Corp. recently given charge of the company's New York sales office.

✦ ALBERT L. SANDERS, secretary and treasurer of the Cherry Valley (Mass.) Woolen Co., has been appointed judge advocate of the grand lodge of Massachusetts, A. F. & A. M.

✦ T. W. CHURCH, JR., secretary of Highland Park Mfg. Co., Charlotte, N. C., and BETTY RAOUL, also of Charlotte, are to be married Feb. 7.

✦ GEORGE B. FLOOD, treasurer of the Arnold Print Works, No. Adams, Mass., retired at the end of the year, and was replaced by A. L. GRINDY, who has been assistant for the last 12 years.

✦ J. DOUGLAS WOOD, general manager of the York Knitting Mills, Toronto (Ont., Can.), has been elected president of the new Woods and Zimmerknit merger. Kenneth W. Harvey, founder of the Harvey Knitting Co., one of the subsidiaries of the Zimmerknit Co., will be vice-president of the Woods Underwear Co., as the new organization will be known. Mr. Harvey will remain in Woodstock, Ont., and continue to operate his mill on Wilson St. H. W. WEIS, general manager of the Woods Underwear Co., Ltd., will be in charge of distribution for all lines of the new group.

✦ DAVID CLARK, general manager of Hiram Leach & Sons, Canada, Huntingdon, Que., is now in England endeavoring to interest some British manufacturer into establishing a dyeing and finishing plant in Huntingdon, Que.

✦ CHARLES H. DAVIS, formerly of Knoxville, Tenn., has accepted the position of office manager of the Rock Hill (S. C.) Printing & Finishing Co.

✦ MILTON ENSOR, manager of the Wilbur Cotton Mills, of Troy, N. C., also southern representative of the Van Gelder Yarn Co., accompanied by MRS. ENSOR, has returned from a trip through Florida, via automobile.

✦ ROBERT THOMAS JOHNSON, who has just been appointed manager of the New York office of the Robbins Hosiery Mills, High Point, N. C., was last week married to MABEL GERTRUDE COBLE at Burlington, N. C.

✦ DR. TEDE, dyeing and finishing expert, will arrive in New York on Jan. 9 on the S.S. "Europa" and will spend some time in this country working with the American Bemberg Corp.

✦ ROBERT G. KELSO has been appointed sales agent for the Colwell Worsted Mills, Providence, R. I., and will have charge of the company's offices in the New York Life Building, New York. He succeeds PETER F. DONOHUE, who has accepted a position with the Walther Mfg. Co., Philadelphia, Pa.

✦ GEORGE A. GEHRING, veteran hosiery buyer, who recently resigned from Bailey's, Cleveland, Ohio, will continue in the hosiery field by representing five eastern mills in Los Angeles beginning Feb. 1. The mills he will act for on the Coast are the Pennsylvania Hosiery Mills, who will sell for the following concerns: Brumbach & Miller, Reading; Burkey Underwear Co., Hamburg, Pa.; West Chester Hosiery Mills, West Chester, Pa.; Berkley Silk Hosiery Co., Paterson, N. J., and I. Schneirson & Sons, Fall River, Mass.

✦ WALTER V. BIKALES has become sales representative of the New York district for Wolf-Brown-Jones Corp., mill agents of men's and women's hosiery, underwear and sweaters.

✦ CHARLES D. WOHLKE announces that he has resigned as general sales manager of Champlain Silk Mills to become a member of the firm of E. A. Riejer & Co., New York, specialists in spun yarn fabrics.

✦ ROBERT SAMUEL BRICE of the sales force of the Spartanburg, S. C., office of the Draper Corp., Hopedale, Mass., and MIRIAM GRAHAM LOCKE, Hopedale, Mass., were married at the home of the bride on

Jan. 1. Mr. Brice is a son of WALTER M. BRICE of the Atlanta, Ga., office of the Draper Corp.

✦ GEORGE H. MINTOFT, who has been in LaPaz, Bolivia, S. A., for several months supervising the erection of machinery for the Saco-Lowell Shops, Boston, passed the Christmas holidays at his home in Hopedale, Mass.

✦ G. H. DURSTON, who resigned recently as western sales manager of the Mohawk Carpet Mills, Amsterdam, N. Y., has taken the position as sales development manager of the Heywood-Wakefield Co., at Boston.

✦ LAWRENCE W. GUILD, a graduate of the Lowell (Mass.) Textile School and now associated in the textile business in Wollaston, Mass., and RHEA COLEMAN, Medway, Mass., were married in Grafton, Mass., on Dec. 31.

✦ W. R. TATTERSALL, who recently resigned as superintendent of the Langley (S. C.) Mills, has been appointed to a similar position of the Eagle & Phenix Mills, Columbus, Ga.

✦ L. J. HILL, for ten years superintendent of the Shoaf-Sink Hosiery Mills, Lexington, N. C., has resigned and accepted the position of superintendent of Maurice Mills, Thomasville, N. C., succeeding J. M. HAYES, recently resigned.

✦ W. W. LEHMAN, superintendent of the manufacturing and control department of the Mohawk Carpet Mills, Amsterdam, N. Y., was elected head of the Mohawk Mills Welfare Association at the annual meeting of directors.

✦ WILLIAM U. HANKE, for many years superintendent of the Orr Felt & Blanket Co., Piqua, Ohio, has taken a position as superintendent at Philadelphia (Pa.) Felt Co.

✦ J. H. WELL has accepted the position of superintendent of the Greenwood (S. C.) Hosiery Mills.

✦ CHARLES GUNN is now superintendent of the Cranwell-Lee Hosiery Mills, formerly the Pikeville (Tenn.) Hosiery Mills.

✦ HAROLD L. WHEELER, who for the last 15 years has been connected with the bleachery of the Nashua (N. H.) Mfg. Co., is now superintendent of the bleaching department of the Oconee Mills at Athens, Ga.

✦ WILLIAM CHERRY, Newark, N. J., aged 77 years, retired from active duty at the local Clark Thread Co. mills on Jan. 1, following nearly 63 years of service, during which time he has been absent only six days through illness. He began to work for the company on Jan. 5, 1868.

✦ GEORGE C. FISCHER, for 46 years a loom fixer for the former Parkhill Mfg. Co., Fitchburg, Mass., and MRS. FISCHER, celebrated their 50th wedding anniversary at their home in that city on Jan. 3.

✦ WILLIAM GREEN, engaged in the wool trade in New Haven, Conn., and MRS. GREEN, have returned from a six weeks' honeymoon trip to Europe.

✦ THOMAS JOY, former master mechanic and superintendent of the Thorndike Co., West Warren, Mass., has taken up his new duties as supervisor of the sales department of the Vacuum Oil Co., in New York.

✦ CHARLES F. MCGILL has taken a position at the Mayo Woolen Mills Co., Millbury, Mass., as foreman of the finishing department. He was formerly employed at the Security Mills, Inc., Newton, Mass.

✦ GEORGE MCKENZIE, former overseer of dyeing for the Otis Co., Ware, Mass., has accepted a similar position with the Falls Co., Norwich, Conn.

✦ JOSEPH LA ROSE has resigned as overseer of carding for the Channing Smith Textile Corp., Cherry Valley, Mass., to accept a similar position with the Coe Woolen Co., Worcester, Mass.

B. H. MAYNARD, formerly of Nashville, Tenn., is now overseer of spinning at the Enterprise (Ala.) Cotton Mills.

Obituary

J. Lee Robinson

J. Lee Robinson, textile executive and president of the First National Bank, Gastonia, N. C., which closed its doors Dec. 16, died in the Gaston Sanitorium, Jan. 4, following a nervous breakdown and a subsequent attempt at suicide by taking gas in his home Saturday night. Artificial respiration was used in the hospital and he was recovering from effect of the gas when his heart failed and he died suddenly. Mr. Robinson was born in Gaston County, April 30, 1872, and went to Gastonia in 1892 as bookkeeper for the general merchandise firm of Gray & Love. About seven years ago he was elected president of the First National Bank, upon the resignation of L. L. Jenkins, a leading cotton manufacturer of Gastonia, who moved to Asheville, N. C., at that time. Mr. Robinson was president of the A. M. Smyre Mfg. Co., Parkdale Mills, Inc., and Rex Spinning Co., and vice-president of Ruby Cotton Mills, Inc., all of Gastonia. In addition, he was treasurer of the North Carolina Orthopaedic Hospital, a trustee of Davidson College, and a director of Flint Mfg. Co. He is survived by his widow, who was formerly Miss Alda Smyre, and five children, as follows: Ralph, William L., Alfred S., J. Lee, Jr., and Sarah. He also leaves the following brothers and sisters: Mrs. Sallie B. Mendenhall, McConnellsville, S. C.; Mrs. S. S. Morris, S. A. Robinson, Marshall Robinson, E. Banks Robinson, Mrs. W. H. Glenn, Raymond C. Robinson, Mrs. J. S. Winget, Charles M. Robinson and Mrs. H. Price Lineberger, all of Gastonia or Gaston County.

John W. English

John W. English, former overseer of the cloth room of the Linwood (Mass.) Mill of Whitin Bros., Inc., for four years, previous to which time he was overseer for nine years in the weave shop of the former Whitinsville (Mass.) Cotton Mills, died in Whitinsville on Dec. 31 from injuries sustained in an automobile accident the same day. He was born in Mechanicville, N. Y., on July 4, 1880. He had been employed in the cotton mills of Whitinsville for 32 years. He was a 32d degree Mason. He is survived by a widow and a son.

James Hogg

James Hogg, an authority on matters pertaining to carpet and rug weaving, died last week at Amsterdam, N. Y., of apoplexy. He was born in England and came to this country in 1880, locating in New England. He went to Amsterdam in 1888 to take an executive position with Stephen Sanford & Sons and remained with that firm until 1906 when he went to Lowell to take a similar position with the Bigelow Carpet Co. In 1913 he again became connected with the Sanford company as consulting engineer and held that position until a year ago when he retired.

Peter L. Morrissey

Peter L. Morrissey, overseer of spinning for the Waucantuck Mills, Uxbridge, Mass., committed suicide by shooting himself in the head at his home in that town on Dec. 2. He had been in ill health for several years. He was 33 years old and went to Uxbridge from Saxonville, Mass., about eight years ago.

W. H. Saunders

William H. Saunders, aged 40 years, night superintendent of White Oak Mills, Greensboro, N. C., died Dec. 5, as the result of injuries received in an automobile accident Nov. 23. He is survived by his widow and two children.

Henry P. Fansler

Henry P. Fansler, aged 60 years, for the last 20 years foreman of the painting department of P. H. Hanes Knitting Co., Winston-Salem, N. C., and special deputy sheriff at the plant, died Dec. 29, as the result of pistol wounds when his gun dropped from his pocket and was accidentally discharged.

W. J. Cole

W. J. Cole, aged 50 years, for more than 25 years manager of the Carrollton (Ga.) plant of the Mandeville Mills, died Dec. 28, at his home in Tallapoosa, Ga., near Carrollton, following a short illness.

Joel Pearson

Joel Pearson, formerly superintendent of the dyeing department of the A. V. Morris Knitting Mills, Amsterdam, N. Y., died last week in the hospital at that place following a complication of diseases. He was born in Sweden but came to this country at an early age, locating at Lowell, Mass., where he learned the trade of dyer.

Burriss W. Ramey

Burriss W. Ramey, overseer weaving, Woodside Cotton Mills Co., Greenville, S. C., died at his home there Nov. 24, after an illness of several months. He was 44 years of age and had been living in Greenville for five years. He is survived by his widow and four children.

Casper Wells

Casper Wells, prominent in the textile industry at Amsterdam, N. Y., died at his home after a brief illness. For over 42 years he worked in the carpet mills of Stephen Sanford & Sons. He was lately superintendent of the color department.

NEWS about MILLS

Cotton

Dale Cotton Mills, Ozark, Ala., are continuing production on a capacity schedule, with full day and night working forces in all departments, and will hold to this basis for an indefinite time.

Grosvenor-Dale Co., No. Grosvenor Dale, Conn., started a night shift of more than 150 new employees on Dec. 29, of which 50 weavers were secured in Webster, Mass. This brings the total number of employees to about 1,200.

Cochran (Ga.) Cotton Mill Co. has recently installed Breton Minerol process (oil-spraying of cotton) in the mills. They have the latest high pressure unit.

Pepperell Mfg. Co., Boston, Mass., announces that it has acquired and will take over as of Jan. 16 the shoe fabrics and specialty divisions of the **National Fabric & Finishing Co.,** Boston, Mass., taking over the divisional offices of the company as well as the sales staffs in various cities. L. T. Bartlett, present vice-president of the fabric firm, will become manager of the new department of the Pepperell company.

Charlton Mills, Fall River, Mass., added 100 employees last week and resumed full schedules Jan. 5. **King Philip** and **Parker Mills** of the **Berkshire Fine Spinning Associates** also increased schedules to nearly normal beginning Jan. 5.

***Lancaster Mills,** Clinton, Mass. A mass meeting of the citizens and taxpayers of the town has been called for Jan. 7 to consider what the town might do should it be compelled to take over the property of the Lancaster Mills, in liquidation, because of the failure to pay taxes for 1930. It will also discuss whether the town should reduce the 1930 tax bill of $32,000, fixing the amount at $15,000, as requested by the mills, and any other matters relating to the future of the plant.

Clark Thread Co., Newark, N. J., has distributed its 19th semi-annual service bonus to employees at its mills at Newark, East Newark, Jersey City and Bloomfield, totaling more than $33,000. About 700 persons shared in the payments, which are arranged in amounts on length of service; those with the company for more than 50 years, of which there are nine, received $260 each.

Rollinson Mills, Inc., 41 Union Sq., New York, with plant at Rocky Mount, N. C., a Delaware corporation, have filed notice of change of company name to the **Caramount Mills, Inc.**

Durham Cotton Mfg. Co., East Durham, N. C., resumed production at its mill on Dec. 29, following the Christmas holiday, running about one-half of the machinery on a full-time schedule.

Union Mills, Monroe, N. C., announce that they are operating on a full-time schedule with both day and night shifts.

Consolidated Textile Corp., Pilot Division, Raleigh, N. C., has resumed a full-time operating schedule after closing down for the holidays.

**Indicates previous mention of project.*

▼

Clyde Mills, Inc., of Newton, N. C., have taken a long lease on the **Martel Mills** property at Elk Mountain in Buncombe County, N. C., and will reopen the plant this week, according to official announcement. The plant, which has been closed since last July and which normally employs from 150 to 175 workers, was formerly the **French Broad Mfg. Co.,** built 20 years ago by a group of Asheville, N. C., business men, to manufacture cotton bed spreads. Six years ago it was purchased by the Martel Mills, Inc. The entire property occupies 125 acres, consisting of a main building, bleachery, warehouse and 100 operatives' homes.

***Delgado Mills,** Wilmington, N. C., recently taken over by the Seaboard Public Service Co., operated by the Samuel Insull interests, 72 West Adams St., Chicago, Ill., are said to have placed an order with Draper Corp., Hopedale, Mass., for 600 automatic looms for weaving carded broadcloths, and will install the new equipment at earliest possible date.

J. & P. Coates, Inc., Pawtucket, R. I., distributed a Christmas bonus to veteran employees. A total of 724 employees with service ranging from 10 to 58 years shared a total of $25,000. This is the largest bonus ever distributed by the company.

Eureka Cotton Mills, Chester, S. C., have acquired the **Springstein Mills,** also located in that city, and in the future this plant will be known as **Eureka Cotton Mills No. 2.** Col. Leroy Springs, Lancaster, S. C., will continue as president of the original company.

Red River Cotton Mills, located near Rock Hill, S. C., were sold at auction by clerk of court at York, S. C., Jan. 5, to Haynesworth & Haynesworth, attorneys, Greenville, S. C., for $32,000, of which $7,000 were for quick assets, and the remainder for the plant equipment and real estate.

Laurens (S. C.) Cotton Mills have placed contract with The Bahnson Co., Winston-Salem, N. C., for humidifiers to be installed in the near future.

Wool

Waterman Worsted Co., Inc., Putnam, Conn., has begun the removal of machinery to its new plant, the former **Devonshire Mills,** Goff's Falls, N. H. The looms are the first equipment to be moved and they will go as fast as they are made ready for shipment. It is estimated that it will be about two or three months before the entire plant is moved.

Cyril Johnson Woolen Co., Stafford Springs, Conn., has announced a 10% reduction in wages, effective Jan. 5. It is the first time wages have been reduced by this company.

Bellingham Woolen Co., operating the **Hecla Mill,** Uxbridge, Mass., as a branch has been taken over by the **American Woolen Co.,** which formerly operated the mill. Four years ago the latter company sold the property to the **Cherry Valley (Mass.) Woolen Co.,** which operated it until about a year ago since which time it has been idle. Previous to that time it was operated in connection with the Bellingham Woolen Co., North Bellingham, Mass., as a branch.

Mayo Woolen Co. and the **Millbury Woolen Co.,** both located at Millbury, Mass., are reported to be running on full-time schedule. The **Selden Worsted Mills,** in Methuen, are reported busy by the Methuen board of trade, which states that the plant is employing 300 workers.

Daniels Mfg. Co., East Brookfield, Mass., has returned to a full weekday operating schedule for the first time in six months with a slight cut in wages, the amount varying in the different departments. The company guarantees steady work for a period of at least ten weeks without night work.

Southwell Wool Combing Co., North Chelmsford, Mass., has foundations laid for addition to its plant. R. E. Runels Construction Co., Lowell, Mass., has the general contract from private plans.

Packard Mills, Inc., Webster, Mass., are operating with day and night shifts.

***Coe Woolen Co.,** Worcester, Mass., recently organized, has started making samples and is ready to begin business as soon as orders come in.

Cocheco Woolen Mfg. Co., East Rochester, N. H., has resumed production after a shutdown of two months' duration. Some of the departments, it is said, will be operated nights. The mill is controlled by Parker, Wilder & Co., and employs about 250 workers.

Bigelow-Sanford Carpet Co., Amsterdam, N. Y., resumed operations Jan. 5 following a two weeks' shutdown for inventory.

Watchorn & Co., Ltd., Merrickville (Ont., Can.), are planning rebuilding of portion of woolen mill recently destroyed by fire, with loss reported in excess of $30,000, including equipment and stock.

Demetre, Sault & Ciriez, Ltd., St. Johns (Que., Can.), has been reincorpo-

rated and will be known as **St. Johns Textile Mills, Ltd.**, with plant and head office in St. Johns, Que. The company has a capitalization of $500,000.

Knit

***Wurm Woven Hosiery Mills**, Oakland, Calif., have awarded general contract to Drew Caminetti, 2212 21st Ave., Oakland, for a one-story mill at Foothill Blvd., and 163rd Ave., 60x108 ft., reported to cost about $50,000, with equipment. Plans have been prepared privately.

Fulwear Hosiery Mills, Columbus, Ga., have advanced production to a full-time day and night schedule, and will continue on that basis for an indefinite period.

Perkins Hosiery Mills, Columbus, Ga., have closed all departments except their silk knitting room, for an indefinite period.

Amsterdam (N. Y.) Hosiery Co. has purchased the equipment of the **Pomo Hosiery Co.** of Gloversville, N. Y., and has installed it in its local plant. The equipment consists of 54 machines, and these, added to the company's present equipment, will give the concern a total of 138 machines, capable of producing 80,000 pairs of hose a week. The company manufactures misses' rayon and cotton hosiery, and has also been making children's sports hose.

Augusta Knitting Co., Utica, N. Y., has expansion plans under way and the sales force has already been increased. A falling off of 5% in sales for 1930 is reported.

Asheville (N. C.) Hosiery Co., operating at full capacity, both day and night, has secured orders far in advance of production, according to David Baer, treasurer. About 100 persons are employed by the company.

May Hosiery Mills, Burlington, N. C., expansion program is getting well under way. Additional machines are being installed in the company's full-fashioned department.

Durham (N. C.) Hosiery Mills reopened their plant on Jan. 5, after the Christmas and New Year holiday week. A full-time schedule has been established in the full-fashioned division, and part-time basis in the cotton and mixed hosiery departments.

Pacolet Knitting Co., Inc., Lynn, N. C., has been chartered to manufacture, sell and deal in knitting products, etc. Authorized stock, $25,000; subscribed stock, $5,000, by J. J. Cudd, Blanch Hair Cudd, Spartanburg, S. C., and J. S. Massenburg, Tyron, N. C.

Maurice Mills, Thomasville, N. C., producing men's and women's hose, are to be enlarged through the installation of new machinery which will raise the capacity to approximately 1,500 dozen pairs of hose per day.

Larkwood Silk Hosiery Mills, Inc., Charlotte, N. C., plan to begin installation of from five to ten additional full-fashioned knitting machines in the early spring, it was announced recently. There is sufficient floor space already available for this additional equipment. E. W. Sachsenmaier is treasurer and manager of the company.

Martz Knitting Co., Erie & Amber Sts., Philadelphia, Pa. Cecil H. Bond and Harry Nathans, Philadelphia, have been appointed receivers in equity for this company under bond of $25,000.

Yorktowne Hosiery Co., Inc., York, Pa., has installed additional "Einsiedel-Reiner" high-speed full-fashioned hosiery machines which were purchased from Robert Reiner, Inc., Weehawken, N. J.

Davenport Hosiery Mills, Chattanooga, Tenn., have plans by Robert & Co. for additional story to mill on 12th St.; also boiler house and new dyeing and finishing plant, at a cost of $150,000. Plans will be ready for bids by Jan. 15.

Trenton (Tenn.) Mills, Inc. are completing the rebuilding of their mill destroyed by fire a number of months ago, and will proceed with the installation of equipment at an early date, totaling about 12,500 spindles and over 100 knitting machines. The company has recently increased its capital to $250,000.

**Indicates previous mention of project.*

Silk

Alabama Braid Corp., Gadsden, Ala., began production on a 100% capacity schedule on Jan. 5, giving employment to about 300 persons. It is expected to hold to this basis for an indefinite period.

Carl Stohn, Inc., Boston, Mass., has filed plans for a mill addition on Madison St., Hyde Park section, to cost about $10,000, exclusive of equipment.

Bouchard & Charvet Mill B, Paterson, N. J., headed by Jean Bouchard and Charles Greischel of Paterson, and Marius Charvet, Hillsdale, N. J., have increased facilities by taking on an additional plant for silk finishing.

***Champlain Silk Mills**, Whitehall, N. Y., have filed notice of plans for liquidation following completion of present orders and it is rumored that the plant may be taken over by the **American Silk Spinning Co.**, of Providence, R. I.

La France Industries, Philadelphia, Pa. Damage caused by a fire last week in the plant at Orthodox & Large Sts., may run as high as $200,000. Officials of the firm state that the damage is covered by insurance. None of the other units in the ten-acre plant was damaged.

Susquehanna Silk Mills closed their plants at Sunbury and Lewistown, Pa., on Dec. 31, for an indefinite period, releasing about 2,000 workers.

Republic Cotton Mills, Great Falls, S. C., plant No. 3, the silk mill, is operating on a 55 hour per week day-time schedule. There are about 150 silk looms on night operations.

Frank Silk Mills, Inc., Murfreesboro, Tenn. Thomas B. Cannon, clerk and master of the Chancery Court, has been appointed custodian of this company, which was involved with Caldwell & Co., bankers, of Nashville, Tenn., who recently went into the hands of a receiver. It is stated that the plant has been closed down pending some disposition of its affairs. The clerk has been appointed to conserve the assets of the company pending the settlement of its affairs.

Rayon

Belamose Corp., Rocky Hill, Conn., rayon products, which closed Dec. 24 for inventory, will notify employees when to return to their respective departments. The shutdown has affected about 600 employees. Officials of the company state that the opening depends on completion of repairs and rayon market conditions.

American Glanzstoff Corp., Elizabethton, Tenn., is now operating at full capacity on both day and night shifts. Approximately 2,200 persons are now given employment. Advance orders are on file to assure steady operation for an indefinite period. The additional machinery installed about five months ago has been put into operation as rapidly as conditions warranted. The last group was put into operation the past week.

Finishing

Reliable Silk Dyeing Co. is now located at 23 E. 4th St., New York, and has increased its plant to double capacity.

Dominion Silk Printing Co., Ltd., Drummondville (Que., Can.), has completed the installation of an engraving plant, where all designs can be engraved for printing. Early in the year 1931 a designing department will be opened, and a large staff of artists employed. These artists will work in co-operation with the company's connections in Europe and the United States.

Miscellaneous

Connecticut Textile Corp., Inc., Norwich, Conn., has incorporated with a capital of $50,000 to conduct a manufacturing business. The incorporators are: John G. Brunini, Charles V. James, Thayer Bldg., both of Norwich; and George B. Gaskell, Yantic, Conn.

American Mfg. Co., Victory Mills, N. Y., is reported to have nearly completed negotiations for sale of its plant and power rights to the New York Power & Light Corp. and consummation of the deal is expected to result in resumption of manufacturing.

Braider Products Corp., Northampton, Pa., a spinning concern, has leased the three-story E. R. Lilly Building. Operations are to start as soon as all machinery is in place. About 100 men and women will be employed on day and night shifts.

Arnold Asbestos Co., Kalamazoo, Mich., has been organized with a capital of $20,000, to operate a local asbestos products mill. The company is headed by M. T. Reddy, Chicago, Ill., and H. A. Moberg, Kalamazoo.

Harvey Fibre Carpet Co., Philadelphia, Pa. J. R. Kohl has been appointed receiver for this company in bond of $5,000.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

—EDITOR.

Dyeing Full-Fashioned Hosiery

Technical Editor:

Will you kindly give me some information as to what will cause a strong fatty odor on pure-silk full-fashioned hosiery and what to do to prevent it? The goods develop this odor after being boxed. My usual method is to boil off with 12% of olive-oil soap. The time is according to style of goods. I have been using this method for five years and never had this trouble before. In the dyebath I add 2% of sulphonated oil and glauber salt. The goods smell nice and fresh before going into dyebath. I use city water. The trouble seemed to start in hot weather, but is less noticeable now. Do you think something in the silk could cause it? I have also dyed and degummed in one bath using olive-oil soap, and have also tried a scouring oil in with the soap, but no better results. (7386)

It seems probable that you are not washing the hosiery thoroughly before the degumming and dyeing operation. The odor which develops in the goods only after they are stored is caused by soap or oil remaining in the hosiery and becoming rancid.

Regardless of whether you dye in the degumming bath or in a separate bath, if the goods are not thoroughly washed to cleanse them of all soap or degumming oil, sericine, softeners, lubricants, and other impurities gathered in the hosiery in the course of manufacture, the fatty acids that remain in the goods are liable to putrefy and develop an unpleasant odor when the goods are stored.

Some soaps and oils will become rancid sooner than others, and it would be well for you to check up on your soap and oil to make sure that nothing but the best of material is used in processing.

There is nothing in the silk fiber which would cause any odor after being processed except the sericine; and after that is removed in the degumming bath, if the goods are properly and thoroughly washed before or after dyeing, there is no danger of any odors developing after the goods are stored. However, there are soaps and oils that are difficult to wash out completely; and silk is much too valuable a fiber to be processed with any such products.

We suggest that you use 20% of olive-oil soap and a small amount of a modified alkali in your degumming bath. Boil off from 30 to 40 min. and then wash the goods in three changes of warm water. We believe that you will find your goods will develop no more obnoxious smell, summer or winter, and that the hosiery will be greatly improved in quality.

In the dyeing bath, use no more than 1% of high-grade turkey-red oil. Scouring oils may be employed on goods that are badly soiled, but in themselves will not act as a preventive of rancidity. The remedy is to use high-grade products and to finish the goods free from soap and grease of any kind.

◆

Calculating Shrinkage of Woolen and Worsted Fabric

Technical Editor:

Could you tell me how to find the percentage of shrinkage of woolen and worsted goods, and how to get the figures on lost weight in per cent? If I had a fabric come into the finishing room from the weave shop and the filling were 2/32s; warp, 4¾; picks, 54; lb., 35½; yd., 61; oz., 14; 64 in. in loom; and I wanted a 12-oz. finish—how would I have to figure this? Would appreciate it if you would send me data. (7412)

You do not give us a real problem to work on. It is not clear whether or not you wish to know how you should figure the different shrinkages of the material in itself, or merely how to make the arithmetical calculation for percentage. If it is the latter which you want, the following is the calculation necessary:

Gray goods	14 oz.
Finished goods	12 oz.
Loss	2 oz.
2 divided by 14 equals	14½%

If you wish the shrinkage of the material, you will have to advise us as to the grade of the 2/32 worsted, the stock blend used in the 4¾-run woolen, the weave, and the desired finish. The best procedure would be to send us a sample of the cloth.

On worsteds, a loss of 10% is usually figured; and on woolens, according to stock, 15 to 25%. You will readily understand that on a cloth such as this it would be necessary to full it considerably to bring it to 12 oz., with a resultant loss in length. You could lose more than 14¼% in stock and still get 12 oz. finished.

◆

Oily Silk Hardens Shuttle Tensions

Technical Editor:

I am sending you a steaming peg which contains two-thread, 20/22-denier, Canton crepe, 60/65 turns. The silk has an oily appearance, which you will readily notice. When used for filling, this silk hardens the fur and tensions in the shuttles, thus causing complaints from the weaving plant. The silk was soaked in a bath of 70 gal. of water, heated to a temperature of

70° F. The emulsion used was 10% neatsfoot oil and 5% olive-oil soap. One pound of salt was also placed in the bath. The silk, when soaked in this manner, ran very well throughout the throwing operations. Please tell me what would cause this oily condition and what is the remedy for it. (7419)

The sample presented and the trouble named indicate that the pound of salt used in the emulsion is the cause of the oily condition and the hardening of the fur and tensions in the shuttles. The reaction of the salt in the emulsion named is to shorten the liquor, cause the emulsion to break up quickly, separate out of solution, and possibly add 8 to 9% of weight to the silk. The remedy will be found in omitting the salt, as it has no other function than that of adding weight. The following formula is suggested: silk, 100 lb.; neatsfoot oil, 10 lb.; soap, 5 lb.; borax, 1 lb.; temperature, 80° F.; water, 85 gal. Use a prime grade of neatsfoot with under 10% of free acid. A neatsfoot compounded with about 30% of mineral will give better results than a straight neatsfoot.

◆

Scouring and Dyeing Knit Goods

Technical Editor:

Recently I have been advised that both scouring and dyeing of rayon knit goods containing coning oil can be performed simultaneously in one bath. The customary practice, heretofore, has been to scour in a suitable bath and then to dye (separate operation) in the same or a different tub with a freshly made solution. I shall appreciate it if you will advise me how to scour and dye oiled knit goods simultaneously and what knitting oil would be best suited for such an operation. (7399)

It is still the common practice to scour rayon first and then dye afterwards, usually scouring in the same machine as is used for dyeing. There has been brought out recently by two or three of the oil-compounding companies a coning oil which can be easily removed in warm water. Since most methods of rayon dyeing call for the addition of soap (and in some cases a mild alkali to the dyebath), and since dyeing is conducted at a temperature of around 160° F., this oil is sure to be removed. If you will get in touch with some of the larger manufacturers of saponified oil, they will give you a practical formula for oiling your rayon, which will enable you to scour and dye in one bath.

◆

Carbon Tetrachloride in Removing Stains

Technical Editor:

In the article "Removing Spots and Stains from Fabrics," by E. R. Donaldson, which appeared in the Sept. 20, 1930, issue of TEXTILE WORLD, *I note that carbon tetrachloride is classified as an excellent solvent for dissolving oils, rosin, and tar; but that it is stated it should always be used in well-ventilated rooms. What is the reason for well-ventilated rooms? I also note that the manufacturers of these products who have actually conducted research, agree that there is a slight weakening effect exhibited towards some of the fibers. I should appreciate any information in regard to the reason for this.* (7402)

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

Carbon tetrachloride should be used in well-ventilated rooms because of its toxic effect upon mankind. It has been stated by S. H. Katz; E. J. Gleim; and J. J. Bloomfield, *Reports of Investigations, Serial No. 2499*, "Carbon Tetrachloride Extinguisher on Electric Fires," p. 14, July, 1923, as follows: "Breathing from 4.6 to 6.3% of carbon tetrachloride in air for 30 min. kills man and 0.086% kills dogs. The simple vaporization of 1 quart of carbon tetrachloride in an ordinary room without ventilation is sufficient to produce the first concentration."

If carbon-tetrachloride systems, such as the "Zoric," are operated properly, there is no danger from the toxic effect.

More research is necessary in regard to the weakening effect of these cleaning fluids. However, the natural tendency for carbon tetrachloride to become acid is still prevalent due to the absorbed moisture in the garments to be cleaned.

◆

Yellow Silk in Hosiery

Technical Editor:

Herewith enclosed you will find part of a stocking. It is said that this stocking is made of yellow 13/15 high-grade silk, although I am not sure. Is it possible to take off the yellow color and to use yellow 13/15 in making stockings? If there is any difficulty in using yellow 13/15, will you please let me know its causes?

I should also like to know how many dozens of hosiery are made from 1 lb. of raw silk, so far as regards ten-, nine-, seven-, five-, four-, three-, and two-thread goods.

Also will you tell me the cost for throwing 1 lb. of raw silk and the cost of manufacturing 1 doz. full-fashioned stockings? Even if you are not sure of the cost, I should appreciate it if you could give me a rough figure. (7372)

The sample submitted indicates that a very high quality of slightly tinted Japan silk was employed in its manufacture. Silk of this character may be used satisfactorily in the production of full-fashioned hosiery, provided that it is not mixed with white silk in the process of manufacturing. That is, the entire stocking would necessarily have to be made of the same silk, since a silk of yellowish cast will not boil out as white as white silk; neither will it produce the same tone of white, although a satisfactory bleach may be obtained from the yellow-cast silk. This is not true of some of the deep-yellow China silks; and, while some grades of yel-

low China silk are of the very highest quality and are used extensively in the manufacture if high-grade hosiery, some trouble is to be expected from the use of China silk in making delicate shades, since it is doubtful if satisfactory bleaches can be obtained.

As regards the question of dozens of hosiery made from 1 lb. of raw silk, it must be borne in mind that there are no standards in the manufacture of hosiery, every manufacturer producing goods either to the trade's specifications or to his own ideas of standard. Therefore relative figures can only be given at the best. Ten-thread goods are rarely ever made of pure silk; such goods generally carry cotton feet and tops, and many nine-, seven-, and five-thread goods are made the same way. There is a large amount of all-silk goods made in the endages from five- to seven-thread. Goods from two- to four-thread are usually all silk. Even with these standards, stockings are still made up on a basis of courses per inch, which will cause considerable difference in the weight of the same endage goods produced by different manufacturers. Roughly speaking, however, we should say that a ten-thread stocking will carry anywhere from 12 to 16 oz. of silk, depending on its construction; five- to seven-thread goods will carry anywhere from 10 to 12 oz. of silk; two- to four-thread goods will carry from 6 to 11 oz., depending on their construction. It must be remembered, as stated above, that machines of different gauge will necessarily have to be employed for different endages of silk. A machine which will satisfactorily handle a ten-thread silk will not satisfactorily handle two- to three-thread silk, and vice versa.

The cost for throwing is likewise dependent upon the endage of the silk and the twist per inch, and carries a wide variation of cost, but will average somewhere around $1.00 per lb.

The cost of producing 1 doz. full-fashioned stockings will also show considerable variation in cost, depending on location of plants geographically, as well as urban and suburban. A different cost will necessarily follow every different endage of silk employed and all the different constructions of the hose. However, roughly speaking, we should say that the cost of producing a seven-thread stocking, exclusive of silks and cotton yarns and selling cost, would run around $3.75 per dozen.

◆

Uneven Dyeing on Knit Goods

Technical Editor:

We enclose herewith a piece of 50% wool and cotton knit cloth dyed in the piece, which runs streaked in the dyeing. Will you please advise us what you think may be causing this trouble, and how it can be overcome? Some rolls are all right and others are quite streaked in the same dyed batch. (7422)

Since you do not advise how this material was dyed, we assume that it is colored with union dyes by the single-bath method. Your statement that some rolls are even, while others are streaky in the same batch, leads us to believe that you did not thoroughly boil off the batch previous to dyeing, resulting in an uneven boil-off, or that you had some mechanical defects, such as improper distribution of steam, uneven spacing of your division slats in the front of the machine, or slow movement of the cloth through the dye liquor.

If your mechanical side and boil-off are satisfactory, look to your dyestuffs and method of dyeing. Remember that a high temperature causes the direct dyestuffs to be taken up more by the wool, while a lower temperature tends to increase the amount taken up by the cotton. Slight additions of soda ash or ammonia prevent the direct colors from dyeing the wool too much. Use as concentrated a bath as possible: the proportion of material to liquor should be from 1:20 to 1:30 in the case of piece goods. If the shade of the wool varies too much from that of the cotton, it may be corrected by working at the boil with shading and dyestuffs. Always run in a neutral bath; that is, in a bath containing glauber salt. Uneven or streaky cloth may be evened up by a glauber-salt boil with a small amount (just under 1%) of trisodium phosphate.

◆

Soaking Silk

Technical Editor:

Will you advise us how to soak 200/250-denier Italian or Japan douppioni so that it will wind well and remain soft after being wound on bobbins. Owing to the nature and size of this silk, it is necessary to have the silk remain soft; otherwise it becomes hard and wiry and very hard to quill and weave. We have been able to wind it satisfactorily, but after the bobbins remain unused for a few hours, the silk becomes wiry again. (7405)

The following formula is suggested for the 200/250-denier Japan douppioni: For 100 lb. of slik use 10 lb. olive-oil soap; 8 pt. neats-foot oil; 2 lb. sesqui carbonate of soda, and 90 gal. water. The soaking time is 20 hours, at a temperature of 90° F. If this does not make the silk soft enough, increase the soda until the desired softness is obtained. If the silk is too soft, reduce the soda and soap proportionately.

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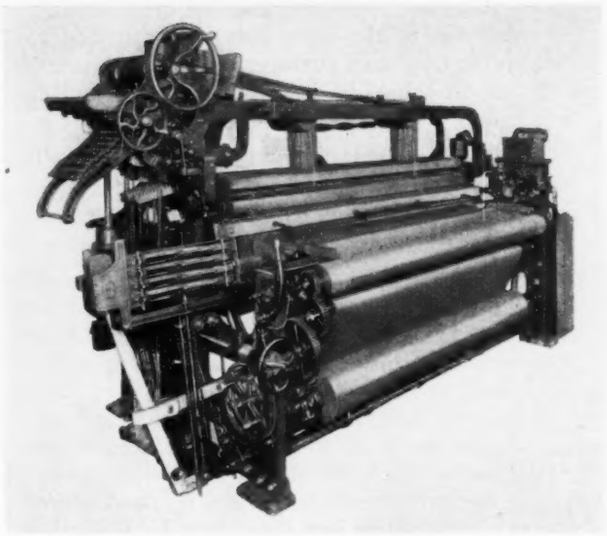
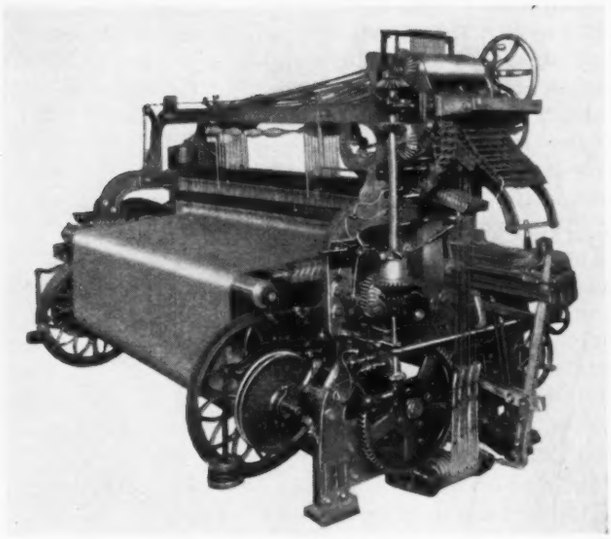
Lubricating Goat Hair

Additional information which we have received relative to Inquiry No. 7368, which was answered in the Nov. 29, 1930, issue of TEXTILE WORLD, indicates that the better grades of lard oil can be used successfully for lubricating goat-hair yarns and that the trouble encountered by the inquirer which he attributed to the use of lard oil may have been due to other causes than the type of lubricant used. While it has been asserted that lard oil is liable to become rancid and has high corrosive qualities due to acidity, it has been found that the tendency of an oil to become rancid is dependent on the quality of the raw material from which it is made or on the presence of small amounts of catalyzing agents which cause rapid absorption of oxygen; likewise the corrosiveness or non-corrosiveness of an oil is gaged by the amount of free fatty acid present. Lard oil, pressed from fresh, high-grade stock, is produced and sold under rigid specifications. When secured from reliable producers, it may be depended on for uniformity. Prime, winter-strained lard oil, for example, may be had with a free fatty acid content guaranteed to be not over 1%. One manufacturer has stated that for lubricating goat-hair yarn a good grade of lard oil is comparable with a good grade of olive oil—both in properties and price—and that lard oil has no superior as a preservative of the sliver.



Front view of new worsted loom



Rear view of high-speed loom

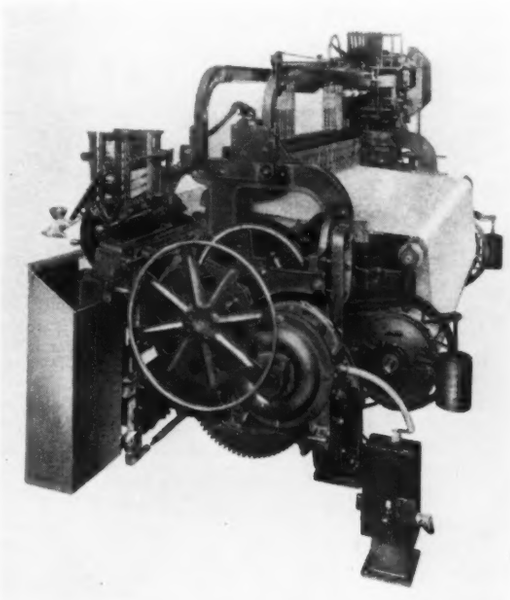
New Machinery & Processes

High-Speed Automatic Worsted Loom

DEVELOPMENT of a high-speed automatic worsted loom having a practical speed range of 130 to 160 picks per minute is announced by Crompton & Knowles Loom Works, Worcester, Mass. Although the loom was originally designed for the manufacture of tropical worsteds in the 8- to 10-oz. class, mill tests show that it is capable of handling certain constructions from 4 oz. up to at least 20 oz., provided the weave and yarns lend themselves to high-speed operations. These tests indicate also that at least six looms can be run to a weaver and 24 to 32 to a fixer's section.

Since the new loom is a 4 x 1 box loom, it permits mixing of the filling to produce fabrics of even quality or allows running of as many as four different colors of filling. At the same time this loom is said to have even greater efficiency than the simplest 1 x 1 box loom. Although the loom weighs only about 3,500 lb., or approximately 1,500 lb. less than the Verybest loom, strength and even weight have been retained where needed, the reduction being made in those moving parts in which a decrease in weight enables increased speed without sacrifice of strength. In addition to providing an improvement in speed of 10 to 20%, depending upon the type of fabric and size of yarns, the new loom permits instantaneous stopping without racking the machine or causing other difficulties. Because of its light weight, advanced design, and simplicity, the new high-speed loom is lower in both first and operating costs than are older models.

In designing the loom, the intermediate type of head was selected primarily because it had proved its ability to be operated at high speeds. The 47% harness and box time has also proved satisfactory in the weaving of worsteds. The head is similar to that which was developed for the Verybest loom; that is, it is built in a complete unit and can be assembled completely before being attached to the loom itself. There have been embodied, however, some improvements over the Verybest head and numerous refinements over the older intermediate head. For example, cylinder and vibrator gears have six pitch teeth in place of eight, this change being made to give greater strength and wearing qualities. The head is so constructed that, with a minimum amount of work, both the top and bottom cylinder gears can be removed. The bearings of the harness chain shaft are so constructed with machined surfaces that the chain shaft can be easily and accurately adjusted. An improvement in the operation of the lock knife is afforded by means of a cam which is on the upper cylinder gear shaft. The new head has a 20-harness capacity only and is $\frac{4}{10}$ space.



Plain end of loom, showing drive

In driving and shipping, the trend has been toward

simplification. The drive is directly upon the crank shaft, with a substantial and simple motor bracket entirely supported from the main loom frame. This arrangement eliminates the support to the floor and the tendency to throw the motor out of alignment. There are two roller bearings on the bottom shaft, and three roller bearings and one double-ball thrust bearing on the crank shaft. The thrust bearing, on the main frame of the loom, takes all the end thrust of the crank shaft.

The shipping is improved by substituting a hand-lever brake release for the foot-lever brake release and the upright brake rod. This results in a lighter and quicker-acting shipper motion and also in the elimination of the parts which were uncomfortably close to the operating parts of the magazine. To help steady the head drive and picking, the loom is equipped with crank- and bottom-shaft gears on both ends.

The take-up roll is directly in front of the breast beam, the top of the roll being directly in line with the fell of the cloth. This location of the take-up roll eliminates some of the back-and-forth movement of the cloth, sometimes referred to as sawing, and also prevents some of the shrinkage in width from the reed to the take-up roll. The cloth winding roll is of the easily removable type similar to that used in the silk loom. As in the case of the Verybest looms, all of the gears have cut teeth. The take-up is the type known as a positive reverse worm. Lay-beam construction is such that there is an angle iron which runs from the drop-box end to the extreme end of the plain-end box. The wood is only about one-half the thickness of that used on the other worsted looms. The result is that the lay has been lightened and the plain-end box strengthened and simplified. The drop-box end is so constructed that the picker race is incorporated into the shuttle box and omitted from the lay end. This results in an easier adjustment and alignment of the shuttle box to the reed line and race plate, and also in lightening the lay end.

The bunter stands are securely fastened to the main frame and to the angle-iron breast beam and have machined surfaces. The bunter levers are backed by coil springs which considerably ease the shock of protection.

It is the present intention to equip this loom with a newly designed magazine which may come to be known as the "1930" magazine. Changes in the weight, reduction of parts, and simplification of the magazine are expected to result in a decrease in expense and an improvement in operation. The basic principles of magazine operation are not changed.

To increase the ease of adjustment, the application of the side slip feeler has been improved. As in the case of the Cotton King and the Simplified silk looms, the loom sides and all frame parts are machined, and the great majority of parts attachable to the loom sides are attached to the outside on the machined surfaces. As the sub-assemblies are likewise machined to jigs, there will be complete interchangeability of parts on this loom, as in the case of the other two looms in the line.

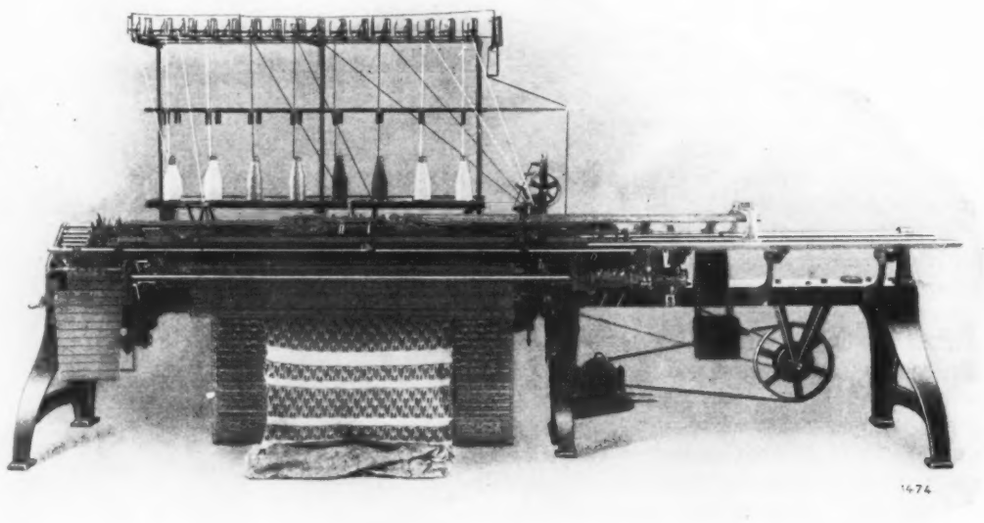
Flat Knitting Machine

ANNOUNCEMENT of a new flat knitting machine, leveloped by Edouard Dubied & Cie, Neuchatel, Switzerland, has been made recently by the American representative of this company, Dubied Machinery Co., E. O. Spindle, 139 Franklin St., New York. The new-type "Ban" machine is a high-speed, double-lock, universal knitter designed to make any fabric from the plainest construction to the most elaborate raised or laced effects or jacquards heretofore made on flat knitting machines, such as single-lock, double-lock, eight-lock, or jacquard types. In addition it is said to permit production of entirely new types of fabrics by a combination of any or all of the above features.

All of the automatic movements of the machine are controlled from a single chain composed of fiber cards. This chain has the advantage of being capable of moving forward or backward over one or two cards, or of remaining stationary. The chain in turn is operated from a new and simplified return counter, which keeps the length of the pattern chain at a minimum. Steel jacquard cards on the front and back of the machine also move forward and backward over one or two cards, giving a wide range of pattern possibilities. The cardigan locks and six-needle rack also add to pattern possibilities.

Inclined-Mule-Spindle Ring Frame

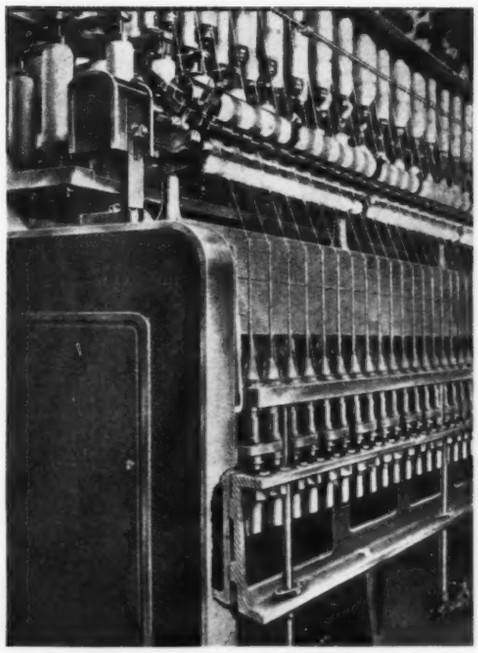
IN THE county of Lancashire, England, the mule is still the favorite cotton-spinning machine; but in Preston, a borough of that county, there has recently been born a new type of ring-spinning frame destined, it is asserted, to weaken seriously this traditional grip



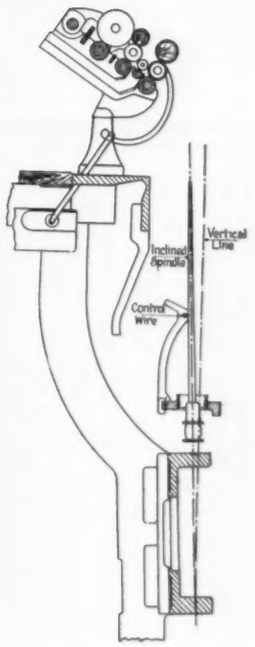
Flat knitting machine enables production of wide range of fabrics

of the older machine. The new frame is appropriately known as the inclined-mule-spindle ring frame; and the patent for the invention is held by the Textile Underclearers, Ltd., 69 Richmond St., Preston. According to a report to TEXTILE WORLD from Frederick W. Tattersall, of Manchester, England, licenses to manufacture the machine have been taken out by Howard & Bullough, Dobson & Barlow, John Hetherington, and Tweedales & Smalley.

Mr. Tattersall reports that 250s yarn has been spun on the new frame. In a recent issue of the English *Textile Mercury*, J. H. Dawson tells of a test in which 132s was spun against similar counts spun on the mule with results that gave entire satisfaction. The accompanying diagram and photograph, reproduced from Mr. Dawson's article, explain details of the machine. The spindle, which has a blade similar to that of a mule spindle, is tilted toward the rolls at an angle of two degrees from the vertical. There are no thread guides, the yarn passing direct from the rolls to the tip of the spindle. The yarn wraps several times around the spindle, then passes through the traveler, and finally winds into a package on the lower part of the spindle. At each revolution of the spindle, the coil of yarn nearest the top slips off over the tip, as in mule spinning. The control wire shown in the diagram governs the coils.



Ring spinning frame equipped with inclined mule spindles

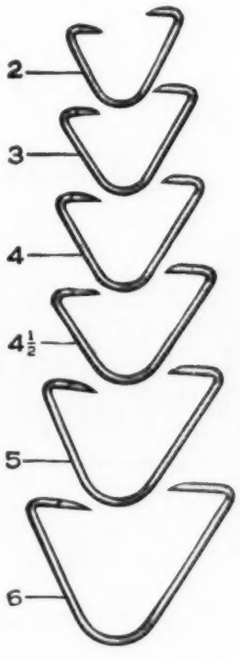


Showing relation of inclined mule spindle to drafting rollers

"These yarns are not hard twisted," writes Mr. Dawson. "The new frame is spinning its yarns with one turn per inch less than the standard for mule yarns. At the same time it is producing a stronger and more regular thread, retaining all the valued roundness and fullness."

In the diagram four lines of drafting rollers are shown, set at an angle of 35 degrees. This is a long-draft arrangement, the second pair of rollers being of small diameter and set close to the first pair. Neither the rollers, rings, nor travelers, however, need differ from those used on the ordinary ring frame.

According to Mr. Dawson, the inclined-mule-spindle ring frame eliminates the drag during winding which limits the fineness and softness of yarns spun on the usual ring frame. Hence is solved by the simplest methods imaginable, he asserts, "the problem which has baffled us since the ring frame's introduction. . . . From the information so far available," he adds, "the new frame should produce even more cheaply than the ordinary frame when spinning counts the latter frame is capable of dealing with. This is apart from the fact that the new frame has attendant advantages in finer and softer yarns."



Belt hooks (actual size)

According to the latest issue of the English *Textile Manufacturer*, there are now several thousand of these spindles on full-sized frames operating under actual mill conditions. In one instance, it reports, a girl spinner is satisfactorily attending four sides of 400 spindles running at 11,000 r.p.m. and making 50s combed filling yarn from uppers cotton. End breakage in this instance is declared to be less than the normal for ring frames, production is said to exceed that of the mule, and irregularity is said to be less than in mule-spun yarn. The inclined-spindle frame of course shares with other ring frames such advantages over the mule as reduced floor-space and less skilled, and consequently less expensive, labor.

On this side of the water there is some skepticism regarding the importance of this invention as far as present ring spinning is concerned. In many circles yarn from the present ring frame is not held to be inferior to that from the mule for low and medium counts. It is asserted that many attempts have been made to apply the mule spindle to the ring frame in the past, and that all have been unsuccessful.

Belt Hook

TO MEET the demand for a belt hook applicable to belts which travel at high speed and run over small pulleys, Clipper Belt Lacer Co., 974 Front Avenue, N. W., Grand Rapids, Mich., has added to its line of hooks a new size, known as No. 4½. The new hook, which has a longer point than the No. 4 hook and a shorter leg than the No. 5, is suitable for lacing any make of belting ¼-in. in thickness. In common with other clipper hooks, the new device is manufactured from a special steel wire of high tensile strength and ability to withstand fatigue and is also supplied in the rust-proof type designed for use where ordinary hooks are liable to corrosion due to moisture, acid fumes, and similar conditions.

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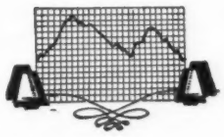
TEXTILE WORLD ANALYST



Large Supplies Threaten Wool Stability

Few Favorable Factors in Situation Likely to Become Effective for Some Time, Says Dr. Haney

Summary: **Raw wool supplies appear to be more than ample the world over, and stocks have accumulated in this country. As the demand for cloth continues poor, and mill consumption has declined, still lower prices are indicated. Sales yarns and cloth appear to be in no position to show independent strength.**

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The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

THE year 1930 closed with raw wool markets easy throughout the world. Prices at London might have been even weaker had it not been for the curtailment of the auctions and large withdrawals. Australian markets have been weak as a consequence, and Bradford has also reacted. The domestic market has slowly receded. Buyers here have been holding off purchases so far as possible and now that the co-operative promises "values" better than foreign, buyers are likely to see no reason for hurrying purchases. Something like half the domestic clip has been sold and the new clip is not scheduled to arrive until May, but supplies are adequate — even though strongly held.

Goods markets abroad may fairly be called poor, and the English coal strike may increase the difficulties of wool manufacturers and importers. Topmakers and spinners are reported to be expecting a quiet demand. Australian producers are under financial pressure. Weakened credit in this country, and reduced purchasing power due to bank failures, may cause only a temporary postponement of buying here, but it comes at a time when manufacturers are sorely pressed. However, stocks of cloth are reported small compared with previous major depressions and recent developments strongly suggest that the depression is in its last stages.

Favorable Factors

The factors which tend to support the price of raw wool follow:

1. Raw wool prices are below cost, which fact suggests that forces are at work to bring about the necessary readjustment.

2. Fine merino wools remain firm in European secondary markets.

3. Foreign and domestic sellers of raw wool are rationing supplies to prevent declines from becoming drastic.

4. Imports are low and receipts at Boston have been declining. The ratio of total receipts in the United States to total mill consumption of raw wool indicates that a better balance between the two is being effected.

5. Domestic supplies of raw wool are firmly held. The market here has been relatively stable notwithstanding many reports of an unfavorable nature. The marketing corporation still adheres to a no-dumping policy.

6. Mill stocks of raw wool are said to be the lowest since the war. The largest consumer is reported to have been virtually out of the market for the last few months.

7. Spinners' replacement margins increased again in December.

8. Clothing stocks are small. This fact differentiates the situation in the current depression from that of 1907 or 1914.

9. Clothing prices have been greatly reduced, and as garments wear out, demand should be stimulated.

10. November and December automobile production held up fairly well, indicating a continuation of the demand for upholstery fabrics.

11. The increase in raw silk prices and decrease in raw wool prices in December reduces the relative dearness of raw wool.

Unfavorable Factors

The factors which tend to depress the price of raw wool follow:

1. Foreign markets have been weak lately. Only withdrawals of 66,000 bales at London and shortening of the auctions five days prevented further declines. London is still out of line with Bradford and Australian markets. Primary markets weakened following the declines at London and further declines are feared in the January auctions.

2. If the marketing corporation keeps its promise to make domestic "values" more attractive than foreign, lower prices are indicated for this country.

3. Bradford top prices fell to the lowest in nearly 30 years.

4. Total receipts of wool in the United States during the summer and fall were further above their normal relationship with wool mill consumption than at any time since 1921, indicating piling up of stocks.

5. Wool mill consumption, employment, and machinery activity all declined in November.

6. Stocks of wool goods increased 3.6% in November, according to the Wool Institute.

7. Wholesale dry goods and department store sales declined in November.

8. Cloth prices continue weak and new cloths have sold substantially lower than a year ago. Spring business is said to be 40% below normal.

9. Bank failures impair credit of clothing manufacturers and tend to curtail buying.

10. The P-V Line continues below

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normal, indicating further business recession.

11. New lows for raw cotton increased the competitive advantage over wool.

The balance of the foregoing factors is rather clearly on the unfavorable side. Most of the favorable factors consist of restriction of supply and are not immediately effective. The active element of increased demand is not only missing, but most indicators of manufacturing activity point toward continued depression.

Raw Wool Prices Soft

Textile World index of raw wool prices in December was 62.5% of the average for 1921-28, against 63.8% in November, and 82.2% a year ago. This index is now 24% below a year ago and is the lowest since November, 1921.

There is usually little prospect of rising prices in raw wool markets as long as domestic consumption is declining and foreign wool is relatively cheap. True, imports have been small both absolutely and in comparison with mill consumption; but domestic receipts have been large and, together with imports, have been in excess of average relation to mill consumption. This situation was at its worst some months ago, but the maladiustment has not yet been corrected. The inference to be drawn is that raw wool stocks have increased and that prices will remain weak at least until the decline in mill consumption is checked.

Domestic Prices Higher Than Foreign

Domestic wool prices continue to be relatively high in comparison with similar foreign grades, yet foreign prices would probably be even lower were it not for artificial restriction of supplies. Should the January auctions show further weakness, as is feared, the marketing corporation will have to reduce its prices if it is going to follow its declared policy of making domestic values equally as attractive as foreign.

Manufacturing Activity Less

November indexes of spindle activity and mill consumption of raw wool declined from October to the lowest level since January, 1921. However, at least one optimistic deduction can be made about the relationship between the indexes of spindle activity and mill consumption. This is that the consumption index usually swings the more widely and falls below the index of spindle activity in the last stages of a depression. This relationship developed in November. The implication, however, should not be pushed too far. It merely suggests that mills have been reducing their stocks and gives no indication of revival of demand.

The P-V Line has risen a little, but it is still below normal, and this indicates further recession in general business for several months.

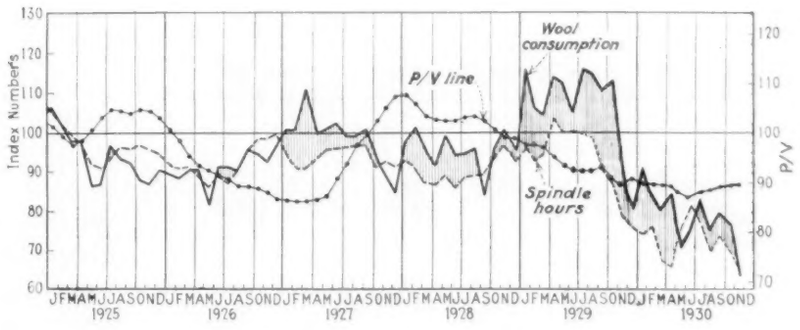
Index Numbers
P/V
Wool consumption
P/V line
Spindle hours
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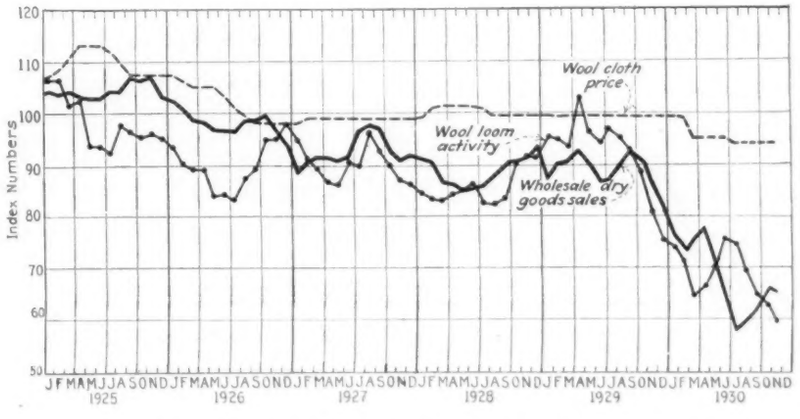
Fig. 1. GENERAL BAROMETER OF WOOL INDUSTRY: Wool Consumption—Grease equivalent; adjusted for a number of working days and seasonal variation, 1921-1928 = 100 (Dept. of Commerce). Spindle Hours—Average of woolen and worsted spindles, per cent active hours to total; adjusted for seasonal variation. 1921-1928 = 100 (Dept. of Commerce). P/V Line—Ratio of general commodity price index to volume of trade (Bureau of Business Research).


Index Numbers
Wool cloth price
Wool loom activity
Wholesale dry goods sales
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1925
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1930

Fig. 2. WOOL CLOTH BAROMETER: Wool Cloth Price—Textile World Index; Loom—Adjusted for seasonal variation, weighted average, Dept. of Commerce; Wholesale Dry Goods Sales—Adjusted for seasonal variation, three-month moving average, Federal Reserve Board; Average 1921-1926 = 100 for all indexes

Worsted Yarn Position No Stronger

Textile World index of worsted sales yarn prices was unchanged at 75.9% of the 1921-28 average in December. This compares with an index of 89.7% a year ago. Clearly the decline in raw wool prices in November and December has improved spinners' replacement margin, and probably the declines in raw wool will sooner or later be reflected in declining yarn prices. Worsted spindle activity has been curtailed slightly more than has wide loom activity, but still appears to be too high to warrant expecting any further increase in spinners' replacement margins.

Cloth Position Weakens Slightly

In November the Bureau of Labor Statistics index of wool cloth prices was 82.1% of the 1921-28 average. This compares with 82.5% in October and 94.4% a year ago. Apparently the stability of raw wool during the summer and some improvement in demand, reduced the rate of decline in cloth prices. November wholesale dry goods sales, however, showed a renewed decline. The replacement margin of the average manufacturer is probably as low as it has been at any time in the last six years.

Bank failures have impaired the credit of many clothing manufacturers and have tended to discourage consumer buying in some sections. Receding general business and further reductions in purchasing power of consumers all indicate a continuation of poor demand. The quantity of clothing cut is running 25 to 30% behind last year, and stocks of wool goods increased in November. Trade reports indicate that spring business is about 40% below normal, and that prices on new cloths and knit goods are below last season's prices. In view of these facts it is difficult to see how cloth prices during the next few months can help but reflect any renewed decline in raw wool.

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Cotton Quiet but Steady

Hedging Light and Contracts Become Scarce on Declines

THE cotton market has remained quiet with prices holding fairly steady during the week. An advance above 10¼c. for March contracts on Monday, appeared to bring in a little more southern hedging, but contracts became comparatively scarce again on a reaction to 10c. for that delivery. While buying has not been general or aggressive, more cheerful feeling which developed with the turn of the year has remained in evidence.

The hope of improving business stimulated by a variety of considerations, such as the low level of commodity values generally, low money rates, increased savings bank deposits, and the gaps that must have been made in stocks of goods during the last year of world-wide curtailment in purchases, has been reflected by a small volume of offerings. It may be said, perhaps, that whereas up to the close of the old year, traders were on the alert for additional indications of depression, they are now looking for and trying to see indications of recovery. This is a change of attitude which would undoubtedly result in increased buying with any encouragement in the development of general business conditions, but it is probable there is more hope of an increase in the volume of distribution of goods and in mill consumption, than of any material advance in prices until definite prospects develop for a reduction in the surplus supply whether it be held by the Farm Board or in the ordinary channels of trade.

Meanwhile the attention of the trade is divided between its study of business developments and prospects and the outlook for the coming acreage. Quite obviously it is still much too early for the formulation of any definite opinion regarding the acreage or the new crop outlook. Preliminary conditions bearing upon the situation are, of course, a level of prices low enough to be unprofitable to a great many producers both at home and abroad combined with a degree of financial stringency in the South which is likely to curtail planting and the use of fertilizers next season. According to a statement attributed to the Federal Farm Board, however, present indications do not point to an acreage decrease of more than 8 to 10%, while the outlook is for an increase of about 5% in the yield per acre as compared with last year, and a greater reduction in acreage would be necessary to prevent a continuance of low prices. This opinion as to the probable yield per acre presumably takes into account the prospect for comparatively little damage from boll weevil as well as the fact that the estimated yield of last year's crop was some 4 or 5 lb. per acre below the ten-year average. Whether it is a view which allows sufficiently for probable reduction in the use of fertilizer remains to be seen, but it is likely that crop possibilities based upon acreage figures as they are formulated, will probably be calculated on the ten-year average yield per acre. One of the prominent crop reporting authorities in a review issued this week said the tendency to plant additional acreage in the western belt by bringing in new lands has apparently stabilized acreage well up around the 40,000,000 mark and that climatic control of the boll weevil is the chief factor in the size of the American crop.

Ideas of world's consumption of American lint cotton for the season have undergone a little change during the week and the outlook is believed to be for a world's carryover at the end of the season larger than for any year since 1921 which was followed by the practical crop disaster of 1921-22. This would probably prove no insuperable obstacle to a sharp advance in prices should the world find itself faced by a materially reduced crop next season, but there are many in the trade who feel that we have entered an era of lower commodity values such as that which followed the Civil War and culminated in the low prices touched at about the time of the Bryan campaign in 1896. This was followed by an advance which was coincident with an increase in the production of gold.

Moderate Merchant Buying

Memphis, Tenn., Jan. 5—A moderate amount of merchant buying to meet maturing commitments furnished about all of the activity in this cotton market during the week. Complaint is general that new orders are few and small. Mill inquiry was a little more active Friday and Saturday; some business seems to be pending. New England centers inquired for low middling and strict middling, while inquiry from southern mills was relatively poor for all grades and lengths. Inquiry for export was almost nil. Inquiry centers on 1⅛ to 1 3/32 in. and on 1 3/32 in. in the better grades. There is some inquiry for very low grades. Offerings consist mostly of odds and ends. Most sizeable lots of even running cotton still in first hands have been withdrawn from the market; the principal supply is owned by merchants. Merchant stocks are heavy but include a large percentage of 1 1/16 to 1⅛ in. for which there is not much demand.

Basis remains about unchanged from the previous week but the official quotation is more representative of asked prices than a reflection of recent sale values, except as to 1 to 1 3/32 in. and 1 3/32 in. and longer, which are scarce and for which there is some buying competition. There were further bank failures in northern Mississippi during the week. The epidemic of bank failures in Arkansas and Mississippi may have an important bearing on the new crop acreage. So far acreage ideas are poorly defined but an important reduction seems certain. There has been little new crop preparation.

Cotton Yarns Have "Hangover"

Dullness Continues from End of Last Year

COTTON yarns have not regained their stride. Trading was bothered by annual inventories toward end of December and interest has not returned to date. There is more inquiry, but not enough to make the market active.

Yarns in the meantime are giving a good account of themselves. Prices have held steady and more spinners are refusing to accept much business at current levels, feeling that by the latter part of this month better demand will place them upon a more attractive selling basis.

There are several spinners who are studying this question now. They will decide in next few days whether to continue the holiday shutdown until prices give them a better break, or to accept a small volume of business now.

Majority of weaving yarn spinners have orders on their books for delivery during the next six to eight weeks. One of the most promising features of the market this week has been larger deliveries on old contracts which means that many of these orders will have been filled before the end of February.

Most orders this week have been for small amounts which are to be shipped as soon as possible either from spinners' or dealers' local stocks. These are in fair shape and usually smaller than in the fall, dealers striving for small inventories due to declining prices the last year. Inventories among selling houses can compare in their reductions from a year ago with those of manufacturers.

Southern Markets Quiet

Southern selling centers report sim-

"MADE OF BEMBERG" IS A STAMP OF QUALITY

The synthetic yarn situation is emerging from the fog

QUALITY DIFFERENCES ARE NOW BEING APPRECIATED

THE very marvel that man could make a textile fiber that had some of the qualities of silk started a new era in the textile industry—and also started quite a bit of trouble.

Ever since the early days when these man-made yarns were known as "artificial silk", yarns of such varying qualities have been made that both the trade and the American woman are insisting on a standard of perfection in buying merchandise made of these yarns.

Man kept improving on man's original invention until yarns were developed that differed one from another almost as much as silk differs from cotton or wool from flax.

The quest for perfection will ever go on—today the highest development in the art of producing a synthetic yarn is Bemberg. The basic chemical method of producing Bemberg is different and the wonderful "stretch spinning" process is exclusive to Bemberg.

Because of the way Bemberg is made, a yarn has finally been produced that has denier for denier the same number of filaments as natural silk—more in the finer sizes.

This multi-multi-filament feature of Bemberg is one of the reasons for the natural subdued luster of Bemberg, for its soft crunchy feel, for its unequalled strength when wet.

And now, as a further achievement, Bemberg has so coordinated and improved production that the quality, the style, the wear that have always been the marks of high priced merchandise are available in a wide variety of garments and fabrics in the big volume price ranges.

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ilar conditions. There was little activity this week because buyers have not emerged from their annual inventory huddles and the usual January stockholders' and directors' meetings. Prices for this reason are largely nominal, waiting for resumption of trading later this month to make a definite trading basis.

Combed yarn spindles in Gaston County operated last week considerably under a 50% basis, reports indicate, showing that this group has not been able to step up production, following dullness that became apparent the middle of last month.

There has been more interest in single combed yarn from knitters, and small lots of both carded and combed have been taken by Pennsylvania underwear mills. All counts were specified from heavyweight up to 30s, showing that the line between one season's goods and the other is hard to draw.

Cotton Goods Stage a Come-Back

Trading Is More Active and Prices Are Higher

THAT the cotton goods market is able to reverse itself so quickly speaks well for the future. Its action from the middle of December to near the end of the year caused much worry, but during the last ten days the trend has turned. Prices are going upward in a conservative manner and trading, while not specacular, is much improved in tone and volume.

This is evidence that the weak selling of last month was out of the ordinary, made for inventory purposes. Print cloth prices have snapped back at least ⅛c., and in one or two instances a ¼c. has been regained. Even at the higher level, it is important to note, that there are sellers who are not interested in current business. They foresee still other and immediate advances in the offing.

HUNTER YARDAGE FIGURES

The Hunter Mfg. & Commission Co. reports that their sales for the last six months of last year averaged 2% greater in yardage than the corresponding period in 1929. Yardage for the year will be 90% of 1929 for that firm and 96% of 1928.

An outstanding feature of the recent market was the new price level established by denim firms. The entire market is now down to 11½c. basis on 2.20 yd., white back, 28 in., offered for delivery through the first quarter, which is the basis at which business has been transacted during recent weeks.

The new price is the lowest that a number of houses have quoted for 15 years. Overall manufacturers are booking more business so that the stabilizing movement in denims is well timed. It is said that subcounts in denims are being discontinued.

◆Cotton Wastes Continue Quiet

THIS is nothing new in the cotton waste situation. Demand for prompt and forward shipments is still limited, although some dealers report a larger number of inquiries from consumers, which may be converted into actual business during the next few weeks. No marked expansion in demand is looked for until the general industrial situation becomes more settled and the raw cotton market shows greater signs of stability.

Prices were somewhat firmer this week, with peeler comber quoted on a basis of 82 to 85% of spot cotton. There are no large stocks of any type of waste hanging over the market and dealers are showing much less willingness to meet buyers' demands.

Domestic Wool Supply Ample

Prices Moderately Firm On Small Business Arriving

WOOL continues sluggish. There is not enough business flowing to test the situation thoroughly. A few limited sales are reported for piecing-out purposes in worsted wool, chiefly for shorter stapled merinos. Woolen wools are heavy with a slight increase in B pulled wools. Carpet wool prices are irregular and manufacturing demand small. Mohair is inactive both domestic and foreign.

Boston received 19% or 38,000,000 lb. more domestic wool during 1930 than in 1929 but total receipts of domestic and foreign together showed a gain of only 2% or 6,000,000 lb., due to decrease in foreign. Deliveries to mills by rail and sea ran 23% behind those of previous year. There is evidently a large amount of good domestic wool unsold at this time. Mill buyers ought to have no difficulty in securing their requirements of original bag and graded wools in quantity at fair prices.

Importing houses with Australian connections continue to make offerings of American style merinos at prices well below quotations for similar wools in bond, so low indeed, that if such offerings should establish a market the National Wool Marketing Corp. would be under the necessity of meeting the situation by lowering prices on similar domestic wools. Further decline in Australian markets would weaken domestic values if the corporation is to give the American consumer the "better value" promised in recent statement of policy.

It has not been a particularly good twelve months for the average wool seller, but would have probably been worse had not the bulk of the 1930 clip passed into the hands of the National Wool Marketing Corp. Activities of this agency on the whole were helpful in preventing anything like a precipitous decline in wool values. Independent merchants have been able to sell a relatively larger quantity of their holdings than has the National Corporation. While the recent statement of policy has met with several interpretations, it seems clear that the cooperative organization will continue its policy of meeting the market, with no dumping of domestic wools.

RAGS DIFFICULT TO SELL

Reworked wool manufacturers have the situation well in hand, with prices on an attractive level and no large inventories in their possession. Rag traders however had a most difficult year, beaten badly by the continued drop in prices and not helped to date by the shutting out of imports. Their spot business at present is almost negligible. Rag importers are no better off. They find it impossible to sell rags brought in under the old 7½c. duty at a profit, and some of the best as well as second grade English white knits are offered at bargain prices.

It is admitted that rags and their processed products are attractively priced. Supplies of mixed rags are arriving slowly, tending to keep prices steady. Good graded sorts are not accumulating. Graders are in no position to fill small current orders for specialty colored knits without storing rags for which there is little or no market at present.

"MADE" NOIL IMPORT

Total output of noils for the first eight months of 1930 was 25% smaller than for the similar period of 1929. Consumption of noils in 1930 was below that of a normal year, but the exact balance between noil output and noil consumption is difficult to estimate. Since the new tariff went into effect steady imports of noils have occurred. Most of these imports have been types of fine noils, production of which was much below normal in the United States. It now appears that attempts have been

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made to bring in under Paragraph 1105, where the noil duty is placed at 23c., certain types of processed clean wool known in the foreign trade as "made" noils. The Bureau of Customs in Washington after a consultation with the appraisers of Boston, New York and Philadelphia decided that "made" noils are not legitimate by-products or wastes of wool combing; that the commodity under consideration has the full staple of wool, whereas wool noils are the short fibers removed from wool in the process of making tops. It is held therefore, that the noil duty of 23c. per pound does not apply, and that the "made" noil is properly dutiable as wool under paragraph 1102 at 37c. per pound.

Dealers Contracting Wastes

Wool waste ended 1930 with relief after having been forced month by month to adjust merchandising operations to a continual decline in prices. Larger business is expected shortly, because stocks of consumers are believed greatly depleted. Dealers hope to contract with mills for fine thread wastes on 45 to 50c. basis. Mills are not inclined to consider contracts under 50c. except on half-blood. There is nothing in the waste situation to make dealers very enthusiastic in contracting for six months' output of any mill. When business picks up, the high tariff on thread wastes, 25c. per pound, will be more of a factor in determining the price of fine threads, provided manufacturing demand holds steady.

◆ Men's Wear Sales Lead Wool Goods

WOOL goods markets have not recovered from the dullness of the latter weeks of the old year. More activity is now found in men's wear than dress goods, but even here volume is smaller than early in December, although showing signs of a pick-up to its former level.

There is hesitancy among buyers. They believe manufacturers will reduce prices throughout the list when next season goods are shown and for this reason they are careful not to order more spot or spring goods than they know they can quickly move.

Dress goods have never regained the momentum they had in November and as end-of-year came demand continued to slacken. Sampling has been and continues good. It is larger than past seasons, but this does manufacturers little immediate good. They need volume orders and it is not there yet.

Prices Lack Firmness

Prices of dress goods are not strong. Easing is apparent enough to give the impression among buyers that if they bargain long enough they can secure reductions from goods manufacturers.

In men's wear the same tendency is noted. Prices of cassimeres have been reduced by some manufacturers who say this was done following the easing of lower grade wools. Buyers want quicker deliveries on their small orders than mills are able to make.

Uncertainty in Worsted Yarns

Wide Range Is Noted In Spinners' Quotations

THERE is no definite price basis in sales yarns. Prices being paid in the small volume of business passing depend on how badly the spinner in question needs orders; whether he is operating full time or not, and when he bought his wools. This is more strongly evident in English spun weaving yarns than in other sections.

There is a gradual softening of prices here and there but no general reduction among all spinners. Quotations of single English spun numbers are lower by 5c., with several large factors than two weeks ago. Two-ply English knitting counts are holding their own fairly well although manufacturers say they are able to better the 97½c. level by 2½c.

Stocks Are Small

Greater reductions would have been seen had not stocks of yarns in manufacturers' and spinners' hands been kept at a minimum. One of the largest sales yarn firms reports that its inventory at the end of last year was only one-third the size of the year previous. This may almost be taken as a criterion of the entire situation.

Character of buying is the reason stocks have reached such a low level. Manufacturers want yarn the day they order it and both spinners and dealers have been unable to accumulate stocks of the popular counts ahead. As soon as deliveries are made from the mill a dozen different manufacturers ordering small lots each will take the shipment. Yet it is difficult for spinners to operate their plants efficiently.

Bathing-Suit Sales Soon

There is little to choose between activity in knitting or weaving counts. Men's wear is keeping the latter in fair shape although individual orders are much smaller than last year. Knitting counts are beginning to shape up. Bathing-suit manufacturers are about to buy. They have sampled their 1931 garments widely and small orders are coming in. Within the next three weeks substantial orders in single yarns are due from this trade.

Raw Silk Shoots Upward

Trade Regards 20c. Rise As Too Good to Last

THE optimists are having their innings in the raw silk market this week end, while developments justify their "I told you so" attitude, it is easy to grow overconfident. Raw silk welcomed the new year with a burst of activity that not even a price advance of 20c. failed to arrest. Broadsilk mills, having bought so meagerly through the closing weeks of the year, were compelled to cover promptly for spring requirements. A firm tone in Japan, a bullish December report for deliveries to American mills, and a steady demand from weavers were three influences making for a strong market. The result was a rise of price in all months, and a steady movement of stocks. Weavers covered freely, despite the advance, and the middle of the current week was marked by some surprisingly large future business. Tuesday, indeed, was a red letter day; it brought the busiest session that the Silk Exchange has known since last spring.

Importers were much encouraged by the upward trend, and some predicted the advent of $3 silk before long. Prospects are that the firmness will continue, subject to the inevitable recessions, until the end of the month. The new strength has not altered the picture, so far as February is concerned, however, and that month is still an uncertain quantity. Broadsilk weavers are apt to be overconfident regarding their own market; they now are producing actively, but unless sales of fabrics show a sharp advance, production will slump the latter part of February, and silk orders in the primary market will drop proportionately. Importers are agreed that February is the test month of the spring season, and demand from broadsilk mills will be the chief factor in determining February raw silk movement. Hosiery mills are buying light, due to curtailment.

Allowing for these uncertainties, the immediate outlook is decidedly better. The Japanese curtailment of output, incident to the annual closing of filatures,

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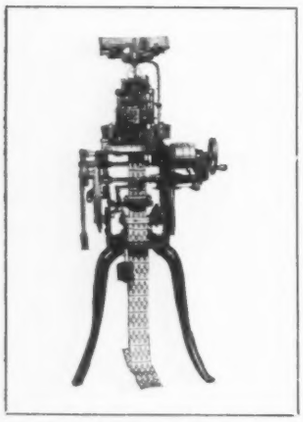

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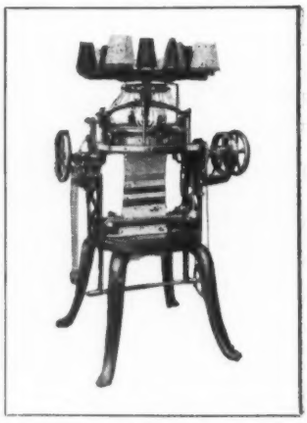

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has reduced stocks available and this has militated to strengthen Yokohama trading prices. Japanese exporters and reelers naturally are eager to see prices advance—to a reasonable point at least—as this reduces proportionately the loss they will suffer when the surplus stocks now in warehouse, are fed into the market.

December deliveries of raw silk to American mills totaled 55,424 bales, according to the Silk Association figures, which was considerably above market expectations, and had a bullish effect on quotations. This total compares with 57,333 bales in the month preceding, and with 44,159 bales in December, 1929. Imports of raw silk during December totaled 64,616 against 58,479 in the same month last year and 55,293 in November, 1930.

◆Outlook Better For Silk Yarns

SILK yarn markets are marking time this week, and, though buying is light, outlook is better. Neither weavers or knitters have placed much business, as they are still busy on inventories, and no real pick-up is looked for before another ten days. Thrown silk reflected the sharp upturn in raw silk and prices advanced 10c. this week, which tended to scare away the already indifferent broadsilk trade. Throwsters regard the rise as too quick, but they look for more settled feeling next week. Broadsilk mills are making inquiries, and some light orders have been placed. Hosiery mills are holding off, pending some movement of their finished goods; the hosiery trade is growing more determined to produce only as their stocks sell.

Spinners are quiet but confident; sales are light, which is considered normal for the post-holiday weeks. Mills have plenty of business booked by broadsilk weavers and are quite busy. The second half of January promises to be active.

◆Lull Follows Spurt In Broadsilks

ACTIVE sampling by both cutters and piece goods buyers but a dearth of real orders marked the first full week of the year in the broadgoods industry. There were a few exceptions to the general lull; some large firms enjoyed a suprisingly good business on Friday and Saturday, immediately after the holidays. This was followed by a let-up, however, and the current week has been a period of watchful waiting. The active flurry of the week-end was entirely a spot proposition, and orders were small; the call was for printed flat crepes, with moderate interest in shantungs. Shantungs are still in the ascendant, and weavers expect these rough goods to be the first to move when the expected mid-January business develops. Cutters are hesitant, due partly to taking of inventory, and partly to approach of Paris openings. The market is confident, and this applies both to buyers and sellers. There is a distinctly better tone, though so far it is nothing more than sentiment.

Production goes ahead at a moderate pace, with the exception of shantungs which are accumulating; weavers are perhaps too sure of the shantung season and are inclined to produce for stock.

Rayon Action Imminent

Trade Looks Hourly For Some Price Development

WITH both producer and consumer groups momentarily expecting some action by the leading companies regarding prices, actual turnover in the rayon industry this week naturally has been light. Some rayon firms are practically at a standstill, and they do not look for any business, until the air has been cleared. Tuesday and Wednesday the market was looking hourly for some announcement; it was taken for granted that a statement would be forthcoming before Monday, Jan. 10. Producers were far from unanimous in their views of what form the expected action would take, and conflicting rumors were listened to eagerly. The report which appeared to be the soundest was that the heads of several large companies were in conference with their staffs during the week, aiming to find out whether there was any last-minute way of winning trade confidence without resorting to a price cut.

STABILITY CHIEF NEED

No one, at any end, wants a price cut; the general call is for stability, for some understanding which will give manufacturers sufficient assurance, so that they can cover ahead for a few months on yarn requirements and plan their own price schedules in accordance with yarn prices. At present, manufacturers are buying piecemeal, taking advantage of the 60-day price guarantee only in the most meager manner. This buying is very uneven; a foremost company has written trifling orders from knitters this week, for early shipments; other firms complain of a complete deadlock.

Frankly, it can be said that both cotton weavers and underwear knitters—and they represent the bulk of the consuming markets at present—are very resentful of the rayon uncertainty. They talk freely of changing their schedules to increase their output of goods made from other yarns than rayon; even while we may safely discount a good percentage of this talk as temporary pique, it is too general to be ignored. Indeed, the uncertainty of yarn prices is seriously embarrassing the manufacturers; elsewhere in these columns this week, there are references to the let-up in sale both of rayon hosiery and rayon underwear, and this is due directly to the yarn price situation. The uncertainty has brought certain knit goods firms to a standstill on some lines, and, such a situation is not apt to stimulate their enthusiasm for the synthetic yarn.

RAYON WASTE QUIET

Rayon waste continued quiet, but there is a stronger undertone, and dealers talk optimistically of a good demand the latter part of the month. The piece goods manufacturers have small stocks of yarn on hand, and these firms will be obliged to begin active buying for spring production within a couple of weeks, it is believed.

Sweater Prices Down

Fall Lines Open 10-15% Below Last Year's List

KNIT goods markets have begun to show some post-holiday activity, but real January buying is not expected to develop for another week or so. Outerwear mills enjoyed a good week, especially at the bathing-suit end. A few Worth Street agents have opened their fall lines of heavyweight sweaters, and prices are 10 to 15% below last year. There is considerable interest in the new models of men's winter sweaters, which are more gay in color than usual. One firm was showing twelve colors in men's pullovers, including tan, blue, maroon, cream and a ruby-red; several of these were pastel shades, which is distinctly an innovation in men's fall goods. This group was of medium weight and the models were made to retail at $5 each. Few orders for

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in which Kaumagraph pauses to look back

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the fall lines have been placed, as only part of the trade is showing, and buyers are waiting to see all lines. It is not likely that fall sweaters will be active for some time. Spring sweaters are still hesitant, and the total spring sweater business placed to date is decidedly less than normal. Bathing-suits sell steadily, and these lines continue the firmest in the outerwear group.

Winter Underwear Moving

There is no sign of immediate drop in heavyweight underwear sales, and the new lines will not be shown before the end of the month. Normally the current season ends in late December, but there were numerous buyers in the market this week and several more weeks of action is expected. Retail stocks are low and stores are obliged to buy for immediate demand. Balbriggans are moving fairly well, but the mill agents say it is too soon after the holidays for real demand. There is a moderate call for cotton spring weights; athletic shirts and shorts are in light but steady turnover. Rayons have slowed up due to the uncertainty of yarn prices. The whole spring group should develop action within a few weeks and some fair buying may be expected, as neither jobbers or stores have any stocks on hand. Although the winter season for heavyweight underwear is abnormally long this year, the volume of business will be well behind last year, due to the hand-to-mouth buying.

Hosiery Outlook Better

Women's full-fashioned silk hosiery was fairly active, mostly in numbers made to retail at $1. Mill men regard the outlook as considerably improved, thanks to the tendency toward curtailment. Mills operating on reduced schedule are still far from being in the majority, but the pace of accumulation has slackened, and another couple of weeks of strong pressure for curtailment would definitely help the situation. Hosiery buyers were still indifferent this week, and Worth Street is relying on next week to mark the turn of January buying. Half-hose as usual is in a better position; there is a good call for numbers made to retail at 35c. and some mills are sold well into spring on the 25 and 35c. numbers. Rayon half-hose is hesitant, as buyers are waiting in the hope that a rayon yarn price cut may develop.

Textile Stocks Average Unchanged

Ups and Downs After Turn of Year Becloud the Trend

ALTHOUGH the country's security and commodity markets steadied after the turn of the year and many items scored advances, textile stocks on the average stood still. Those which advanced with the tide were offset by those which receded. American Woolen preferred took a 6 point rise from its low of around 21. Real Silk Hosiery gained 4 points from a previous price around 22. Merrimack common at 35 was off 3 points and Pepperell at 80½ was off 4½ points.

Duplan Silk Net $270,304

Net profit after all charges and Federal income taxes, for the six months period ended Nov. 30, 1930, of $270,304, as compared with $746,557 for the corresponding period in 1929, is reported by Duplan Silk Corp. and subsidiaries. This is equivalent after $166,184 of preferred dividends paid to 29.75 cents a share on 349,800 common shares outstanding on Nov. 30, 1930, or 40.56c. per share on 300,000 shares now outstanding. The capitalization of the corporation has been reduced to 37,151 shares of 8% cumulative preferred stock and 300,000 shares of no par common stock by the acquisition during the month of December, 1930, of 1,985 preferred shares and 49,800 common shares.

Kilburn Will Reduce Capital

Stockholders of Kilburn Mills, New Bedford, Mass., unanimously approved recommendation of directors that par value of the company's shares be reduced from $100 to $75 by the payment from surplus of $25 per share. The first payment of $15 will be made on January 20 to stock of record Dec. 19, and the balance will be paid later in one or two instalments.

Holmes Meeting Adjourned

Meeting of stockholders of Holmes Mfg. Co., New Bedford, Mass., was adjourned until Jan. 27, at which time a committee composed of directors and five preferred and common stockholders will present some plan for reorganization. On Sept. 27, 1930, receivables, inventory and investments totaled about $440,000, and notes and accounts payable about $216,000. President D. R. Weedon states the company needs between $250,000 and $300,000 of new money in order to carry on the business.

Gains in R. & D. R. Cotton Mills

A brighter outlook for the Riverside and Dan River Cotton Mills, at Danville, Va., is foreshadowed by a gradual rise in the value of the company's stock. The upward trend is attributed to improvement in the textile situation generally and also to recent developments in the mill situation at Danville.

Investors who were in the market for the company's preferred stock and who have been offering 60 have raised their bids to 65 and one Danville banker has several orders for the preferred stock at the higher figure. The common stock which has been dallying around 8½, has moved up to 10½.

Financial Brevities

Stockholders of the Kilburne Mill, New Bedford, Mass., voted a stock par value reduction from $100 to $75. The difference of $25 will be paid to stockholders. This reduces the capital from $2,250,000 to $1,687,500. A first payment of $15 will be made to stockholders Jan. 20 and the balance of $10 a share in May.

Oswego (N. Y.) Rayon Corp. has increased its capital stock from 20,000 to 40,000 shares of no par common stock, in order to provide funds for a program of expansion of facilities.

Boston Stock Auctions

The following sales of textile shares were made at auction, Wednesday, Dec. 24:

Shrs.	Mill	Par	Price	Ch'ge
163	Associated Textile	...	35–36½	....
200	Brookside	100	20	—6
433	N.E.So. com	100	16 lot	....
75	N.E.So., prior pfd.			
20	N.E.So. 7% pfd.			
50	Boston Mfg. (1901) pfd	100	4 lot	....
20	Manadnock	100	35	....
61	Naumkeag, ex. div.	100	80½–84	....
50	U.S. Worsted, 1st pfd.	100	1 lot	....
200	Wamsutta	100	8¾	—2¼
10	Suncook, pfd.	100	35	—8
30	United Elastic, ex. div.	.....	20–17½	—2½
3	Lancaster, com.	100	$1.10 lot	....
20	Sharp, com.			
10	Sauquoit Spinning pfd.			
547	Whitman	100	11 lot	....
18	Newmarket	100	16½	+1½
100	Holmes, com.	100	1	....
15	Great Falls	100	$1.50 lot	....
125	West Boylston, com.	100	60c	....
131	Boston Mfg. (1901) com.	100	6 lot	....
45	Boston Woven Hose, com.	.....	60¼	+ ¼

2,336 total

The following sales of textile shares were made at auction Dec. 31:

Shrs.	Mill	Par	Price	Change
52	Associated Textile	...	35–36½	....
10	Cornell Mills	...	3	....
100	United Merchants & Mfgrs., pfd.	100	500 lot	....
100	United Merchants & Mfgrs., v. t. c.			
100	Old Colony Silk Corp.	...	2	....
20	National Fabric & Finishing 7% prd.	100	34	+24
38	United Elastic	...	17–20	....
35	Merrimack Mfg., com.	100	35	— 3
455	Total			

The following sales of textile shares were made at Wednesday's (Jan. 7) auctions:

Shrs.	Mill	Par	Price	Change
75	Associated Textile,	...	35–36½	.....
5	Pepperell	100	80½	— 4½
5	Naumkeag	100	84	.....
30	Everett (1)	...	1¼	.....
22	Lyman (2)	...	1	.....
36	Arlington	100	16½	— 2
6	Border City	100	3¼	— ¼
4	Union Cotton	100	5¼	.....
11	Brookside	100	19	— 1
100	West Point	100	85	— 4½
100	Esmond, pfd.	100	95½	— 6½
20	Harmony, pfd.	100	22½	+ 3½
15	Royal Weaving	100	95	—20
429	Total			

(1) $29 paid in liquidation.
(2) $220 paid in liquidation.

QUOTATIONS

at close of business, Jan. 7, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	Jan. 7	Dec. 30	Jan. 8 1930
PRINT CLOTHS			
27 -in., 64x60, 7.60	3¼-3⅜c.	3⅜c.	4⅜c.
38½-in., 64x60, 5.35	5⅛c.	5⅛c.	6⅞-7c.
39 -in., 68x72, 4.75	6c.	6c.	7⅝-8c.
39 -in., 72x76, 4.25	6⅛c.	6⅛c.	8⅛-8⅜c.
39 -in., 80x80, 4.00	7⅛- 8c.	7⅛-7⅜c.	9⅛-9½c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	6c.	6c.	8c.
36-in., 48x48, 3.00	6⅛c.	6⅛-6⅜c.	9⅛-9⅜c.
37-in., 48x48, 4.00	5⅛-5⅜c.	5⅛c.	7¼-7½c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	6c.	6c.	8-8⅛c.
36½-in., 64x60, 5.75	5c.	5c.	6¾-7 c.
MISCELLANEOUS			
Drills, 37-in., 3 yd.	7⅛c.	7⅛c.	10½-10⅝c.
Denims, 2.20	11¼c.	12⅛c.	15c.
Tickings, 8 oz.	16 c.	16 c.	19½c.
Standard prints	7⅛c.	7⅛c.	9⅛c.
Eastern staple ginghams, 27-in.	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	8½— 8½
Peeler strips	7½— 8
Sak. comber	7¾— 8
Choice willowed fly	3¾— 4¼
Choice willowed picker	3 — 4
Sak. strips	10½—11
Linters (mill run)	2½— 3½
White spooler (single)	7½— 7¾

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.—4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.19	22s	$0.22½
10s	.19 - .19½	24s	.23 - .23½
12s	.19½- .20	26s	.24 - .24½
16s	.20 - .20½	30s	.25½- .26
20s	.20½- .21	40s ex. qual.	- .37

TWO-PLY SKEINS AND TUBES

8s-2	$0.19	26s-2	$ .24½
10s-2	.19 - .19½	30s-2	- .26
12s-2	- .19½	36s-2	- .32
14s-2	- .20½	40s-2	.33 - .34
16s-2	20½ - .21	40s-2 hi.brk.	.37 - .38
20s-2	21 - .21½	50s-2	- .42
24s-2	23½- .24	60s-2	- .52

SINGLE WARPS

10s	$0.19	24s	$0.23½
12s	- .19½	26s	- .24½
14s	.19½- .20	30s	- .26½
16s	.20 - .20½	40s ex.qual.	.38 - .39
20s	.21 - .21½		

TWO-PLY WARPS

8s-2	$0.19½	24s-2	$0.24
10s-2	.19½- .20	26s-2	- .25
12s-2	.20 - .20½	30s-2	- .26½
14s-2	.20½- .21	40s-2 ordin.	.34 - .35
16s-2	- .21	50s-2	- .43
20s-2	- .21½	60s-2	- .53

8s-3 and 4-ply skeins and tubes; tinged, 17; white, 19; waste, 16½

HOSIERY CONES (Frame Spun)

8s	$0.18½- .19	22s	$0.22 - .22½
10s	- .19	24s	.22½- .23
12s	- .19½	26s	.23 - .23½
14s	- .20	30s tying	.25 - .25½
16s	- .20½	30s reg.	.26½- .27
18s	- .21	30s ex.qual.	.28½- .29½
20s	- .21½	40s	- .35

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.34 - .35	60s-2	$0.54 - .55
30s-2	.38 - .39	70s-2	.64 - .65
36s-2	.40 - .41	80s-2	.76 - .77
40s-2	.42 - .43	90s-2	.92 - .95
50s-2	.47 - .48	100s-2	1.15 -1.20

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.35	60s-2	$0.55
30s-2	- .40	70s-2	- .65
36s-2	- .41	80s-2	.77 - .80
40s-2	- .43	90s-2	.95 -1.00
50s-2	- .48	100s-2	1.18 -1.20

SINGLES

12s	$0.27½	30s	$0.37½
14s	-.28	38s	- .40
16s	-.28½	40s	- .41
18s	-.29	50s	.46½- .47
20s	-.30	60s	.53½- .54
24s	-.32½	70s	- .64
28s	-.36	80s	- .75

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.50 - .51	90s-2	$1.29 -1.32
30s-2	.52 - .53	100s-2	1.59 -1.61
36s-2	.55 - .56	120s-2	1.98 -2.05
40s-2	.58 - .59	30s	.63 - .65
45s-2	.60 - .61	40s	.68 - .70
50s-2	.62 - .64	50s	.75 - .77
60s-2	.70 - .72	60s	.83 - .85
70s-2	.82 - .84	70s	.95 - .97
80s-2	.94 - .98	80s	1.17 -1.19

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Dec. 30	For Week - High	Low	Closed Jan. 7	Net Chge.
January	9.90	10.24	9.97	10.15	+.25
February	9.88	10.18	10.04	10.14	+.26
March	9.96	10.36	10.01	10.23	+.27
April	10.08	10.41	10.27	10.36	+.24
May	10.21	10.58	10.28	10.50	+.29
June	10.33	10.66	10.53	10.61	+.28
July	10.45	10.82	10.52	10.73	+.28
August	10.53	10.85	10.70	10.78	+.25
September	10.53	10.85	10.72	10.80	+.27
October	10.61	10.95	10.57	10.83	+.22
November		11.01	10.85	10.91	.....
December		11.12	10.76	10.99	.....

SPOT FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	Liverpool
Friday, Jan. 2	10.15	9.69	5.33
Saturday, Jan 3	10.30	9.74	5.40
Monday, Jan. 5	10.15	9.66	5.43
Tuesday, Jan. 6	10.15	9.72	5.34
Wednesday, Jan. 7	10.25	9.80	5.39
Thursday, Jan. 8	10.30	....	5.45

FOREIGN COTTONS
Egyptian Cotton

Alexandria Exchange, Jan. 6		Change
January Sak	13.73	+0.52
February uppers	10.56	+0.25
Jan.-Feb. Shipment c. i. f. Boston. (Tariff not included)		
Fully good fair Sak		15.80
Fully good fair to good Uppers		13.25

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	19½
Peruvian Pima No. 1	19
Peruvian Moderate Rough	16
Peruvian Full Rough	21
China Tientsin No. 1	9½
India Rough	7 to 10
India Smooth	7 to 10

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Jan. 3	Saturday, Dec. 27
10 markets average	9.47	9.11
Memphis	9.05	8.65

PREMIUM STAPLES
First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in	11.75—12.05c.
1 3/16-in	13.30—13.55c.
1¼-in	17.90—18.25c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	7,962	7,002	13,811
F.o.b. included in total	6,718	6,457	12,730
10 markets	49,236	50,653	91,741

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	8,342	24,406	34,359
Gross receipts	18,320	49,817	59,587
Total since Aug. 1, net	530,475	710,881	567,716
Shipments	26,801	48,240	52,468
Total since Aug. 1	676,740	993,313	874,747
Total stock	393,121	418,861	280,560
Decrease for week	8,481	*1,579	*6,117
Unsold stock in hands of Memphis factors	76,036	63,221	.....
Decrease for week	1,138	*10,826	.....

*Increase

AVERAGE PRICE JAN.-FEB. SHIPMENT
HARD WESTERN COTTON
F. o. b. New England

	Middling	St. Middling
1 1/16 in	12½-12¾c.	12¾-13⅛c.
1⅛ in	12¾-13¼c.	13¼-13¾c.
1 3/16 in	14½-15 c.	15½-16 c.
1¼ in	19 -21c.	20 -22c.

Basis on New York, March 10 23c.

SPOT FLUCTUATIONS AND STOCKS

Market	Middling Dec. 29	Middling Jan. 7	Sales	Stocks This Week	Stocks Last Year
Galveston	9.70	1,000	2,900	675,915	489,085
New Orleans	9.57	9.80	6,000	775,095	531,099
Mobile	8.95	9.15	598	177,737	41,529
Savannah	9.28	9.53	1,418	314,831	75,520
Norfolk	9.50	9.75	830	97,624	73,469
New York	9.95	10.25	.....	229,512	96,053
Augusta	9.06	9.31	415	126,329	111,108
Memphis	8.75	9.00	9,656	331,790	425,192
St. Louis	9.00	8.75	.....	13,702	13,883
Houston	9.70	9.95	14,794	1,461,671	1,136,563
Dallas	9.15	9.45	17,650	32,373	13,380

DIFFERENCES ON AND OFF MIDDLING

	Dallas	Memphis	Montgomery	Augusta	Average
WHITE GRADES					
M. F	.75†	1.00†	.85†	.75†	0.87†
S. G. M	.60†	.75†	.75†	.63†	.70†
G. M	.50†	.50†	.60†	.50†	.51†
S. M	.35†	.25†	.35†	.25†	.30†
S. L. M	.75*	.75*	.65*	.50*	.64*
L. M	1.50*	1.75*	1.50*	2.25*	1.44*
S. G. O.**	2.50*	2.75*	2.50*	3.50*	2.31*
G. O	3.50*	4.00*	3.50*	4.50*	3.25*
YELLOW TINGED					
G. M	0.50*	0.75*	0.50*	0.50*	0.58*
S. M	1.00*	1.25*	1.00*	1.00*	1.03*
M.**	1.75*	2.00*	1.50*	1.50*	1.58*
S. L. M	2.50*	2.75*	2.25*	2.25*	2.20*
L. M.**	3.50*	4.00*	3.00*	3.00*	3.05*
YELLOW STAINED					
G. M	1.50*	1.75*	1.50*	1.50*	1.55*
S. M.**	2.25*	2.50*	2.50*	2.50*	2.30*
M.**	3.00*	3.25*	3.50*	3.50*	3.10*
BLUE STAINED					
G. M.**	1.75*	2.00*	1.75*	1.75*	1.63*
S. M.**	2.25*	2.75*	2.75*	2.75*	2.33*
M.**	3.00*	3.25*	3.75*	3.75*	3.10*

**Grades not deliverable on contract. †On Middling
*Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne	$0.29 –$0.30	¾ blood	$0.27 –$0.28
Fine clthg	.25 – .26	¼ blood	.27 – .28
½ blood	.28 – .29		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.65 –$0.68
California, Northern	.58 – .60

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.70 –$0.73	B-Super	$0.45 –$0.52
A-Super	.58 – .60	C-Super	.41 – .43

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Stap'e fine	$0.71 –$0.73
Staple ½ bld.	.65 – .68
Fine and fine medium	.63 – .67
¾ blood	.55 – .58
½ blood	.53 – .55

MOHAIR—DOMESTIC

Best Carding	$0.30 –$0.33
Best combing	.45 – .48

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.18 –$0.20
Cape firsts	.20 – .22

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.60 –$0.63
64s	.45 – .48
58s-60s	.40 – .42
(IN GREASE)	
Montevideo:	
58s-60s	$0.18 –$0.19
56s	.17 – .18
50s	.16 – .17
Buenos Aires:	
4s, 40-44s	$0.12 –$0.13
5s, 36-40s	.11 – .12

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.25 –$0.26
China: Combing No. 1	.14½– .15
China Filling Fleece	.13 – .14
Szechuen ass't.	.14 – .14½
Cordova	.13 – .14
Scotch black face	.14 – .15
East India: Kandahar	.20 – .22
Vican'r	.24 – .26
Joria	.23 – .25

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.85 –0.87½
2-24s 40s	.95 – .97½
2-26s 44s	1.02½–1.05
2-28s 46s	1.07½–1.10
2-30s 48s	1.12½–1.15
2-32s 50s	1.15 –1.20

(Single yarns 5c. less than above)

2-36s, 58s	$1.30 –1.32½
2-40s, 60s	1.37½–1.42½
2-40s, 64s	1.42½–1.45
2-50s, 66s	1.60 –1.65
2-60s, 70s	1.95 –1.97½

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.87½–0.90
2-20s, 48s in oil	.92½– .95
2-20s, 50s in oil	.95 – .97½
2-20s, 56s in oil	1.07½–1.10
2-20s, 60s in oil	–1.25
2-20s, 6's in oil	1.32 –1.35
1-15s, 46s dyed	1.05 –1.07½
1-15s, 48s dyed	1.07½–1.10
1-15s, 50s dyed	1.10 –1.12½

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.15 –1.17½
1-20s, 60s	1.20 –1.22½
1-18s, 64s, dyed	1.42½–1.45
1-26s, 64s	1.22½–1.25
1-30s, 60s, Warp	1.30 –1.32½
1-30s, 64s, Warp	1.32½–1.35
2-30s, 64s, Fancy mixes	–1.65
2-40s, 64s, Zephyrs	1.50 –1.52½
1-50s, 66s	1.60 –1.62½
2-50s, 66s	1.75 –1.77½
1-60s, 70s	1.95 –1.97½
2-60s, 70s	2.05 –2.10

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.02½–1.05
1-402, 50-50-60s on cops	1.15 –1.17½
1-40s, 50-50-64s on cops	1.17½–1.20
1-40s, 50-50-64s Australian cops	1.25 –1.30

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.93–$0.95
Half-blood (60-62s)	.85– .87
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.75– .78
Low ¾ blood	.70– .73
High ¼ blood (50s)	.65– .68
46s S. A. and N. Z.	.60– .63
44s S. A. and N. Z.	.58– .60
40s S. A. and N. Z.	.56– .58

TOPS—BRADFORD, ENG. (JAN. 2)

Fine (70s)	27 d	¾ bld. (56s)	15 d
Fine (64s)	23 d	¼ bld. (50s)	13 d
½ bld. (60s)	20 d	Cross-bred (46s)	10½d
¾ bld. low (58s)	18 d		

NOILS—BOSTON

Fine	$0.47–$0.50	High ¼ bld.	$0.35–$0.37
Half-bld.	.42– .45	Low noils	.30– .32
Aver. ¾ bld.	.38– .40	Medium colored	.30– .32
Fine colored.	.38– .40		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.70 –$0.72
Lap, fine colored	.51 – .53
Hard ends, fine white	.50 – .53
Hard ends, ¼ blood white	.33 – .35
Hard ends, fine colored	.23 – .25
Hard ends, medium colored	.18 – .20
Card, fine white	.25 – .28
Burr, fine Carbonizing	.30 – .33

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.04½–$0.05½
Merinos, Fine Dark	.04 – .04½
Merinos, Fine Light	.11 – .12
Serges, Blue	.06 – .07
Serges, Black	.06 – .07
Serges, Red	.08 – .09
Knit, White	.21 – .22
Knit, red	.12 – .13
Knit, Light Hoods	.11½– .12½
Worsted, Light	.05½– .06
Worsted, Blue	.07 – .07½
Worsted, Black	.07 – .07½

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%	$4.50
Japan organzine, 2 thd. sp. crack. sk. 81%	3.95
Japan crepe, 3 thd. gd. XX bob. 83%	4.10
Japan crepe, 3 thd. sp. crack. bob. 81%	4.00
Japan crepe, 4 thd. crack bobbins, 78%	3.70
Japan grenadine, 4 thd. sp. grand singles, 87%	6.20
Japan grenadine 4 thd. 85%	5.85
Japan grenadine 3 thd. 90%	7.10
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.90
Hosiery tram, 3 thd. Japan 90%	5.20
Hosiery tram, 5 thd. Japan, 85%	4.25
Hosiery tram, crack XX 78%	3.30

SPUN SILK YARNS (Terms: net 30)

40/2	$3.15	60/2	$3.35
50/2	3.25	62/1	2.35

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.85	$3.15	$3.15
Special Grand, 85%	3.40	3.00	3.00
Grand XX, 83%	3.20	2.92	2.92
Special Crack, 81%	3.00	2.85	2.85
Crack XX, 78%	2.92	2.80	2.80
Extra Extra, 73%	2.80	2.70	2.70
Best Extra, 68%	2.75	2.60	2.60

Canton filature, new style, 14/16	$1.82
Canton filature, new style, 20/22	1.65
Tussah filature, 8 cocoon	1.20

NATIONAL RAW SILK EXCHANGE

	Close Dec. 29	For the Week High	For the Week Low	Close Jan. 6	Net Chge.
January	2.42	2.62	2.39	2.62	+.20
February	2.41	2.63	2.40	2.63	+.22
March	2.42	2.65	2.40	2.65	+.23
April	2.42	2.65	2.40	2.65	+.23
May	2.42	2.65	2.40	2.65	+.23
June	2.42	2.63	2.39	2.63	+.21
July	2.41	2.63	2.40	2.63	+.22
August	2.41	2.62	2.39	2.62	+.21

Dec. 29 to Jan. 6—Total contracts, 871. Total number of bales, 8,710. Total approximate value, $24,388. Trading unit Crack XX 13-15 white 78%.

Domestic Rayon

VISCOSE PROCESS
Prices Nominal

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18	1.60	1.50
75	30	1.70	1.60
100	18	1.25	1.15
100	40	1.30	1.20
125	36–50	1.20	1.10
150	24–30	.95	.90
150	36–40	1.00	.95
150	60	1.15	1.10
150	75–90	1.20	1.15
170	24–27	.95	.90
170	60	1.15	1.10
200	30	.90	.85
200	35–40	.90	.85
200	75–80	1.10	1.05
300	44–60	.78	.75
450	54–60	.78	.75
600	72–96	.78	.75
900	100–144	.78	.75

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.60	$1.50	150	$0.95	$0.90
100	1.25	1.15	175	.95	.90
125	1.20	1.10			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.40
40	30	2.40	120	90	1.30
52	30	2.20	150	112	1.25
			180	135	1.10

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Prices Nominal

Open bleached waste	–$0.15
Open unbleached waste	.11– .13
Bleached thread waste (mfs.)	.11– .11½
Bleached thread waste (misc.)	.06– .08
Colored thread waste	...– .05
Colored clips	...– .05

CONVERTED RAYON WASTE

Bleached tops	$0.33–$0.36
Unbleached tops	.30– .33
Bleached noils	...– .12
Bleached garnetts	.14– .18
Unbleached garnetts	.15– .17
Colored garnetts	...– .13

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

If your mill can't make a profit with obsolete machines what will be your answer to the inevitable? Will you close your doors or modernize your equipment?

Let us show you how much less expensive the latter course will prove.

TEXTILE MACHINE WORKS

Reading, Pa.

The "READING"

Full-Fashioned Knitting Machine

Southern Mill Securities

(A. M. Law & Co., Spartanburg)

	Bid	Asked
Abbeville Cotton Mills	..	40
Anderson Cotton Mills	55	65
Arcade Cotton Mills	..	50
Arcadia Mills	..	200
Arcadia Mills, pfd	80	90
Arkwright Mills	..	45
Augusta Factory, Ga	..	20
Avondale Mills, Ala	700	900
Beaumont Mfg. Co	200	250
Beaumont Mfg. Co. 7% pfd	94	100
Belton Mills	..	20
Belton Mills, pfd	55	63
Bibb Mfg. Co	95	100
Brandon Corp., A	..	40
Brandon Corp., B	..	6
Brandon Corp., pfd	..	70
Calhoun Mills	..	85
Chadwick-Hoskins Co. (par, $25)	7	9
Chesnee Mills	..	40
Chiquola Mfg. Co	..	200
Chiquola Mfg. Co., pfd	80	85
Clifton Mfg. Co	88	92
Clinton Cotton Mills	..	220
Columbus Mfg. Co., Ga	55	60
Cowpens Mills	..	20
D.E. Converse Co	..	80
Dallas Mfg. Co., Ala	35	40
Darlington Mfg. Co	..	40
Drayton Mills	65	..
Dunean Mills	100	110
Dunean Mills, pfd	92	97
Eagle & Phoenix Mills, Ga	..	55
Easley Cotton Mills, pfd	..	30
Enterprise Mfg. Co., Ga	..	80
Fairforest; Finishing Co., serial notes	95	100
Florence Mills	40	50
Florence Mills, Pfd	95	100
Gaffney Mfg. Co	..	15
Gainesville Cotton Mills, Ga	..	120
Glenwood Mills	85	95
Gluck Mills	45	60
Gossett Mills	..	50
Graniteville Mfg. Co	..	85
Greenwood Cotton Mills	500	..
Grendel Mills, pfd. (par, $50)	40	45
Hamrick Mills	..	90
Hartsville Cotton Mills	110	120
Hunter Mfg. & Com. Co., pfd	62	66
Industrial Cotton Mills Co., pfd	..	30
Inman Mills	100	110
Inman Mills, pfd	90	100
Judson Mills, A, pfd	85	90
Judson Mills, B, pfd	80	85
King, John P. Mfg. Co., Ga	..	80
Lancaster Cotton Mills	225	..
Laurens Cotton Mills	..	110
Limestone Cotton Mills	..	90
Lydia Cotton Mills, serial notes	90	100
Marion Mfg. Co., N. C	..	90
Marlboro Mills	..	11
Mills Mill, pfd	80	90
Mollohon Mfg. Co., pfd	90	100
Monarch Mills	..	83
Musgrove Cotton Mills	..	20
Newberry Cotton Mills	95	100
Ninety-six Mills	400	..
Norris Cotton Mills	..	30
Orr Cotton Mills	..	50
Orr Cotton Mills, pfd	60	65
Pacolet Mfg. Co	..	80
Pacolet Mfg. Co., pfd	..	75
Panola Cotton Mills, Class A, pfd. (par, $60)	45	50
Pickens Cotton Mills	105	115
Piedmont Mfg. Co	85	92
Piedmont Print Works (no par)	..	8
Piedmont Print Works, pfd	..	60
Poe, F. W. Mfg. Co	18	22
Riverside & Dan River Mills	9	10
Riverside & Dan River Mills, 6% pfd	59	65
Saxon Mills	..	50
Sibley Mfg. Co., Ga	50	60
Southern Bleachery	..	20
Southern Bleachery, pfd	..	70
Southern Bleachery, serial notes	90	100
Southern Franklin Process	18	22
Southern Franklin Process, pfd	95	100
Southern Worsted Corp., pfd	70	80
Spartan Mills	..	120
Spencer Corp., serial notes	95	100
Union-Buffalo Mills	..	30
Union-Buffalo Mills, 1st pfd	64	68
Union Buffalo Mills, 2nd pfd	..	35
Victor-Monaghan Co	51	54
Victor-Monaghan Co., pfd	100	110
Wallace Mfg. Co	..	90
Ware Shoals Mfg. Co	110	120
Woodside Cotton Mills Co	..	20
Woodside Cotton Mills, pfd	12	16
Yarns Corp. of America, gold bonds	95	100

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co	52	52	56
Amoskeag	8	..	..
Arlington	16¾	15	17
Associated Textile	36½	34	37
Bates	64	59	64
Berkshire, Associates, com	4	4½	6
Berkshire Associates, pfd	25	25	30
Bigelow-Sanford, com	31	..	..
Boott Mills	120½	..	108
Edwards	80¾	59	63
Esmond, pfd	95½	95	98
Farr Alpaca	70½	55	57
Hamilton Woolen	40	33	36
Hill	9	9	12
Indian Orchard	20½	20	25
Ludlow	117½	115	118
Merrimack, com	35	..	35
Nashua, com	10½	7	10
Nashua, pfd	66	27	..
Naumkeag	84	80	83
Newmarket	16½	14	18
Otis	43	30	32
Pacific	17	..	..
Pepperell	80½	73	76
Plymouth Cordage	66	64	..
York	8¾	6	8

◆

Textile Calendar

Southern Textile Association, Dyers', Bleachers' and Finishers' Division, Annual Meeting, Hotel Charlotte, Charlotte, N. C., Jan. 10, 1931.

The Textile Forum, N.A.C.M., master mechanics, Boston (Mass.) Chamber of Commerce, Jan. 13, 1931.

North Carolina Hosiery Mill Traffic Managers Association, Sheraton Hotel, High Point, N. C., Jan. 14, 1931.

Silk Association of America, Annual Dinner, New York, Jan. 15, 1931.

Southern Textile Association, Alabama-Mississippi-Louisiana Division, Regular Meeting, Montgomery, Ala., Jan. 30, 1931.

National Retail Dry Goods Association, 20th Annual Convention, Hotel Pennsylvania, New York, Feb. 2 to 6, 1931.

Boston Wool Trade Association, annual banquet, Copley-Plaza Hotel, Boston, Mass., Feb. 5, 1931.

The Textile Forum, N.A.C.M., warp preparation and weaving, Boston (Mass.) Chamber of Commerce, Feb. 10, 1931.

International Association of Garment Manufacturers, 24th Annual Convention and 18th Annual Textile and Machinery Exposition, Hotel Stevens, Chicago, March 3 to 5, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 13 to 17, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

American Cotton Manufacturers Association, Thirty-fifth Annual Convention, Hotel Traymore, Atlantic City, N. J., May 21 to 23, 1931.

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Jan. 7:

	High	Low	Last Sale	Net Chge.
Adams Millis	24	23	24	+2¼
American Woolen	9⅜	6⅞	9⅛	+2¼
American Woolen, pfd	29	21	27	+6
*Assoc. Rayon, pfd	34	34	34	+1⅜
Belding-Heminway	2⅜	2¼	2⅜	+ ⅛
Botany Mills, A	1⅛	1⅛	1⅛	— ⅛
Cannon Mills	18	17⅜	18	+1⅛
Century Ribbon	2½	2½	2½	+ ⅛
Collins & Aikman	15	14	14½	+1½
Consolidated Textile	⅛	⅛	⅛	..
*Fabrics Finishing	⅜	⅛	⅜	..
Gotham Hosiery	7	4⅞	6½	+2¼
Industrial Rayon	57½	55½	56	+1
Kayser, Julius	17⅜	16⅛	17⅛	+2
Kendall, pfd	20⅛	20	20	— ⅛
Mallinson	2⅛	2⅛	2⅛	+ ⅛
Mohawk Carpet	13	10⅞	13	+3⅛
Munsingwear	30¼	29	30¼	+4⅛
Pacific Mills	17	16⅞	17	+1⅛
Real Silk Hosiery	26⅛	25	26⅛	+4
*Tubize Chat. B	4⅛	4⅛	4⅛	+1⅛
United Piece Dye Works	25	23⅛	23⅛	+1⅛
Van Raalte	14	14	14	— ⅛

*Listed on Curb.

Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co	300	320
Barnard Mfg. Co	..	10
Berkshire (com.)	3	..
Bourne Mills	11	..
Border City Mfg. Co	3	..
Charlton Mills	..	50
Cornell Mills	..	..
Davol Mills	..	5
Flint Mills	40	..
King Philip Mills	3	..
Laurel Lake Mills (com.)	..	5
Luther Mfg. Co	..	80
Merchants Mfg. Co	..	..
Narragansett Mills	..	5
Pepperell Mfg	72	..
Pilgrim Mills	29	..
Richard Borden Mfg. Co	..	3
Sagamore Mfg. Co	57½	59
Shove Mills	..	5
Stafford Mills	..	1
Stevens Mfg. Co	28	..
Union Cotton Mfg. Co	16	..
Wemteaoe Mills	..	1

N. Carolina Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Asked
Acme Spinning Co	60	75
American Yarn & Processing Co	60	70
Chadwick-Hoskins Co. (Par $25)	7	10
Chadwick-Hoskins Co., 8%, pfd	88	96
China Grove Cotton Mills	..	83
Climax Spinning Co	50	65
Clover Mills	..	23
Converse, D. E. Co	..	80
Crescent Spinning Co	45	55
Dixon Mills	89	98
Durham Hosiery, 6%, pfd	20	25
Eagle Yarn Mills	50	63
Efird Mfg. Co	60	70
Erwin Cotton Mills	..	114
Erwin Cotton Mills Co., 6%, pfd	80	95
Flint Mfg. Co	76	90
Flint Mfg. Co., 7%, pfd	..	92
Globe Yarn Mills (N. C.)	..	15
Gray Mfg. Co	..	75
Hanes, P. H. Knitting Co	7	10
Hanes, P. H. Knitting Co., 7%, pfd	85	94
Henrietta Mills, 7%, pfd	40	55
Imperial Yarn Mills	..	60
Linford Mills	60	71
Locke Cotton Mills Co	40	55
Majestic Mfg. Co	100	120
Mansfield Mills	..	60
Mooresville Cotton Mills	..	5
Mooresville Cotton Mills 7%, prior	..	72
Myers Mills	..	55
Myrtle Mills	..	51
National Yarn Mill	50	60
Perfection Spinning Co	50	66
Ranlo Mfg. Co	..	107
Roanoke Mills	..	60
Rosemary Mfg. Co., pfd., 7½%	90	95
Rowan Cotton Mills Co	60	74
Seminole Cotton Mills Co	..	70
Sterling Spinning Co	50	65
Stowe Spinning Co	50	61
Victory Yarn Mills Co	..	41
Ware Shoals Mfg. Co	115	125
Ware Shoals Mfg. Co., 7%, pfd	90	98
Winget Yarn Mills Co	33	50
Wiscassett Mills Co	155	180

No Change in Danville Strike Following William Green's Visit

Following William Green's visit to Danville, Dec. 30, it is quite apparent that the strike at the Riverside & Dan River Cotton Mills has resolved into nothing more than a fight for union recognition. There is little prospect for an early settlement of the dispute while, in the meantime, the mills are being operated on maximum schedules permitted by existing market conditions.

President Green, of the American Federation of Labor, addressed a gathering of strikers and other Danville people, estimated at 7,000, and offered his proposal to settle the strike. This proposition involved the following terms:

1. That all workers who were employed in the Riverside & Dan River Cotton Mills at the time of the strike (Sept. 29) return to work immediately, "and all without discrimination with the right to join the union if they wish."

2. That immediately after the strikers return to work all "questions of dispute be referred to a board of arbitration" composed of two representing the mill management and two workers, with either Admiral Richard Byrd or former Governor Byrd, of Virginia, acting as final umpire.

Executives of the mills had nothing to say in regard to President Green's proposition. The mill management announced several weeks ago that all former workers, except a few undesirable people who could not expect further employment in the Riverside & Dan River Cotton Mills, would be given work as rapidly as there were available jobs.

Predicts More than "Seasonal Increase" During Spring Months

"An analysis and evaluation of the main determinants of business activity lead us to believe that there will be a somewhat larger-than-normal seasonal increase in business during the late spring months of this year, resulting in a better basic position of activity by about May or June," says the current issue of the *Textile Organon*, (formerly the *Textile Economist*) published by the Tubize Chatillon Corp. "Beyond that time," it continues, "we would expect a gradual bettering of the situation, provided there are no major disturbances in Europe; a curtailment of agricultural output; and a favorable and constructive use of that intangible thing called Federal Reserve policy both internally and internationally.

Dry Goods Institute Convention Jan. 20-21

Plans for the fourth annual convention of the Wholesale Dry Goods Institute, to be held Jan. 20 and 21, at the Hotel Pennsylvania, New York City, were announced this week. The speakers on Tuesday, Jan. 20, will include W. J. D. Bell, president and Flint Garrison, director-general of the institute, George W. Aufderheide, of Arbuthnot-Stephenson Co., Henry Matter, secretary of the institute, Sherman P. Haight, of A. S. Haight & Co., and John M. Botts, of Harrington & Waring. Buyers group meetings and a meeting of the piece goods division will be features of the afternoon. Reports of committees and election of officers will be the chief features Wednesday.

Exhibition on Science and Use of Color Jan. 20 to Mar. 15.

The great advances recently made in the use of color in textiles and fabrics, will be a feature of the Exhibition on the Science and Art of Color which will be given by the Museum of Science and Industry of New York at its headquarters in the Daily News Building from Jan. 20 to Mar. 15.

"The Exhibition will be the first comprehensive effort yet made to indicate the use and future possibilities of color in virtually all departments of modern life and will bring to the general public and the technician a better understanding of both the scientific and artistic aspects of color," Professor Charles R. Richards of the museum staff announced.

Viscose Makes Price Cut

First definite action in the long-expected rayon price cut came at press-time Thursday evening when the Viscose Co. announced a downward revision of 5 to 30c. on its principal deniers. The key number 150 denier, 24 filament, was reduced 20c. on first grade and 17c. on second grade; the new price is 75c. per lb., first (old price 95c.); and 72c. per lb. second (old price 90c.); same price obtains for 36 and 40 filament. Other revisions follow: 75 denier, 18/30 filament, cut 25 to 30c., the price being $1.35 first quality and $1.25 second; 100 denier, 18/40 filaments reduced 15 to 20c., prices being $1.10 first, $1.00 second; 125/36 reduced from $1.30 to $1.00 for first, $1.20 to 90c. for second. The new list cuts 150/60 from $1.15 first and $1.10 second to 85c. and 82c. In coarser grades there are minor reductions.

Quality Takes Precedence over Efficiency in Silk-Mill Modernization, says Lewin

(Continued from page 31)

depending on how beneficial the improvement is likely to be and how badly it is needed. Any reduction in the number of claims based on imperfections in the goods will naturally help to pay for the new machine."

"Does the silk industry generally recognize the importance of a depreciation fund?" I asked.

"The mills recognize this necessity to the extent of saying something about it on their books," he said, "but as for setting an actual amount aside each year for this purpose, very few of them do it."

"At what rate should the investment in new silk equipment be charged off?" I inquired.

"The *Cost Accounting Manual for Broadsilk Weavers*," said Mr. Lewin, "gives the depreciation rate on machinery as follows: looms and winders, 7½%; warpers, 6%; and quillers, 12½%. These rates, in my opinion, are not sufficient and should be made larger. Winders and quilling or copping machines are particularly susceptible to rapid depreciation due to wear. A rate of 12½% on both of these machines, based on single-shift operation, is not excessive. The rate allowed for depreciation on warpers and looms, also based on single-shift operation, should be at least 10% annually.

"I believe that in these days of extreme competition a minimum rate of depreciation should be established at 10%, with latitude for increasing it when necessary to meet individual problems or to meet any revolutionary ideas that may come in the future. No definite rates of depreciation discharge have been established as yet by the Department of Internal Revenue."

I asked Mr. Lewin as to what it is advisable to do with equipment which is to be replaced with modern machinery. He earnestly recommended scrapping it, but added rather whimsically that this is one of the ideal policies of management to which he referred when he spoke about the clergyman who could not live as he preached.

N. A. C. M. Hold Forum for Master Mechanics

Problems encountered in the maintenance of machinery and other equipment in textile mills were discussed at the Textile Forum of the National Association of Cotton Manufacturers Tuesday, Jan. 13, in the Boston Chamber of Commerce Building. Master mechanics from mills throughout New England attended this session which was the fourth in the present series.

Midwestern Power Show in Chicago Feb. 10 to 14.

The Fifth Midwestern Engineering and Power Exposition will be held in the Coliseum, Chicago, Feb. 10 to 14 inclusive. It will bring together leading makers of equipment much of which is suited for textile mill installation. There will be a representative group of exhibitors and it is expected that the attendance will be large.

Ala.-Miss.-La. Division of S.T.A. to Meet on Jan. 30

The Alabama - Mississippi - Louisiana Division of the Southern Textile Association will hold its next meeting in Montgomery, Ala., Jan. 30, the program and exact place of the meeting to be announced later. R. J. Jennings, West Point Mfg. Co., Lanett, Ala., is chairman of the division.

Bulk-Harvested Cotton Plants Suggested as Raw Material for Rayon

From TEXTILE WORLD'S Southern Office

RECENT experiments at the University of North Carolina have excited interesting speculation on the commercial possibilities of growing cotton for its cellulose content and the byproduct value of the seed, disregarding entirely its lint value. If the cotton plant can be successfully grown, harvested, and marketed in competition with wood pulp as the raw material for rayon manufacture, much unprofitable farm land in the South could be utilized to advantage. Extensive experimental work has been conducted during the last growing season by Dr. Frank K. Cameron, professor of chemistry, University of North Carolina, and a student, Nicholas W. Dockery, who is interested in a large cotton plantation near Rockingham, N. C.

The results are said to indicate that the entire cotton plant except the roots can be utilized as raw material for rayon, and can be produced at slightly more than one-twentieth of the cost of producing lint for the same purpose under present methods of cultivation.

Experiments on the Dockery plantation revealed that the entire plant yielded approximately 60% of cellulose, as contrasted with 52% in the case of spruce.

Professor Cameron stated to the southern editor of TEXTILE WORLD that experiments to determine at what stage in its plant life cotton contains the maximum amount of cellulose have been completed, and that experimental work is being suspended until the beginning of the next growing season in March. At that time efforts will be made to ascertain the most satisfactory method of cultivating cotton to obtain the highest cellulose yield per acre. Changes in the method of growing, which will eliminate practically all hand labor in cultivation and permit mechanical harvesting somewhat similar to that used in the case of wheat or hay, doubtless will be found most practical. The experimenters believe that such changes will enable the cellulose content of the plant to be increased to 65%, and the total harvest to 5,000 lb. per acre.

One plan considered is to include the seed in the pulping process and subsequently to recover cotton-seed oil by a chemical process, while an alternative is to gin the entire plant in the same way that seed cotton is now ginned. Should the growing of cotton for cellulose value become widespread in the south, it is felt that much of the present surplus and unprofitable acreage would be diverted from cultivation of lint cotton and the market for the latter would become more stabilized. If this bulk-harvested cotton proves suitable as a raw material for rayon and other synthetic fibers, there seems probable that other cellulose-consuming industries will be interested in it.

Gaston County Mills Not Impaired by Bank Suspensions

***From Southern Office,* TEXTILE WORLD**

RECENT bank suspensions in Gaston County which culminated in the tragic death of J. Lee Robinson, president of the First National Bank, of Gastonia, Jan. 4, have not materially impaired the financial position of any combed yarn mills in that section, according to information obtained from reliable sources this week by the southern editor of TEXTILE WORLD.

Plans are now being formulated, with the sanction of the Comptroller of the Currency, to reopen the First National Bank of Gastonia which closed its doors Dec. 16 following heavy withdrawals of deposits. The reorganization committee is composed of S. A. Robinson, Fred L. Smyre, W. L. Balthis, R. N. Aycock, S. N. Bosce, E. J. Rankin and Kay Dixon, several of whom are textile executives.

Preliminary plans call for the raising of $500,000 additional cash, to be subscribed by old stockholders in the bank and undisclosed outside interests.

Sentiment in Gastonia is strongly in favor of reorganizing the closed institution as a memorial to its president, the late J. Lee Robinson, and prospects for success of the undertaking are encouraging.

The mills of Gaston County are in sound financial condition and fully able to continue operations as usual, according to A. G. Myers, president of the Citizens National Bank and of Myers Mills, Inc., of Gastonia. In making this statement to TEXTILE WORLD, Mr. Myers referred specifically to mills which were depositors of the First National Bank when it closed.

Persistent investigations this week failed to reveal any distress sales of combed yarns by Gaston County spinners. It has been known for some time that creditors have been operating certain mills in the Lowell group, and the recent bankruptcy proceedings against Avon Mills Co. are not the result of current financial stress in Gaston County. This plant has been idle for more than 12 months.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Jan. 3, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, follow:

	Week Ended Jan. 3	Total to Date 1931	Total to Date 1930
Domestic	906,000	906,000	1,330,000
Foreign	1,045,000	1,045,000	923,000
Total	1,951,000	1,951,000	2,253,000
IMPORTS AT PRINCIPAL PORTS			
Boston	1,045,000	1,045,000	923,000
Philadelphia	594,000	594,000	2,954,000
New York	729,000	729,000	915,000
Total	2,368,000	2,368,000	4,792,000

New Holeproof Prices

New prices have been announced by Holeproof Hosiery Co., Milwaukee, Wis., as follows:

Style	Wholesale	Description
4443	18.00	48 gauge grenadine
2263	12.50	42 gauge grenadine
2663	11.25	New style; high twist chiffon
2153	9.50	High twist chiffon
2100	8.00	All silk chiffon—42 gauge
3003	14.50	Fine gauge service weight grenadine
2243	11.50	All silk service
2233	9.50	Silk to top service; lisle sole
2013	7.50	Silk to hem service.

Chlorine Finds New Use in Treatment of Mill Water

(Continued from page 38)

Meeting, Kentucky-Tennessee Section, says, in part:

The settling basins have shown no evidence of septic action since pre-chlorination was started. The filters have been greatly improved in the appearance of the sand bed, and in the length of filter runs.

Chlorine oxidizes organic material, destroys bacteria and algae, prevents the formation of or oxidizes any hydrogen sulfide that may be present, reduces the amount of chemicals required, and appears to assist in forming alum floc.

In their Patent No. 1,733,070 on the use of chlorine in paper manufacture, Patillo and McMahan state:

In white water which we have coagulated, we have found a ph value of 5.5 to 0.5 most effective for coagulation and that the coagulation is more effective in the presence of a small amount of residual chlorine which appears to serve as a catalyst in promoting the coagulation.

A careful study shows that chlorine, when used ahead of the hot-process lime-soda systems, prevents the formation of silicate scale. This is true also to a lesser degree when chlorine is introduced into the make-up water for a boiler ahead of such compounds as sodium aluminate.

There is no question but there is a sliming up of mill supply systems causing spotting of sheeting and similar cotton products. Chlorine will keep mill supply lines entirely free from slime formations and will do away with the decayed marshy odors often noticeable when mill water is heated in dyevats and kettles. The obvious benefits derived from chlorination all indicated that chlorine is a chemical which should find its place in treatment of industrial water supplies as it has in sanitation.

Mill Executives Visit Textile Engravings, Inc.

Over 200 textile executives, many of whom are members of the Silk Association of America, were entertained at a plant inspection and banquet sponsored by Textile Engravings, Inc., Bound Brook, N. J., on Tuesday, Dec. 30. A demonstration of various processes of textile engraving which took place at the plant in the afternoon was followed by a banquet served at the new Elks Club, where Congressman Albert H. Vestal, of Indiana, who introduced the "design piracy" bill, outlined the progress made thus far to give copyright protection to textile designs.

Hitherto, textile engraving has been considered one of the "secret processes" of the industry and for that reason particularly keen interest was displayed in the demonstration of die-mill and a pantograph work, and hand-stipple and machine engraving of printing rollers. Each step in the various processes, the advantages and limitations of each method, and the extreme care needed to insure satisfactory results were explained by George E. Stone, vice-president and general manager of the company. A unique four-color paper printing machine, said to be the only one of its type in existence, also attracted attention.

Speaking of the design piracy bill which bears his name and which already has passed the lower house, Congressman Vestal predicted quick action in the Senate and final enactment before Congress adjourns. Other speakers at the banquet were Charles A. Eaton, Congressman from the Fourth District of New Jersey; Mayor Federle, of Bound Brook; Horace Cheney, vice-president, Cheney Bros., South Manchester, Conn.; and George E. Stone. T. A. Flockhart, president of Textile Engravings, Inc., presided at the dinner.

New Philadelphia Wool House Formed

Laird, Ridge & Co., Inc., is the name of a new wool house which began operations at 37 South Second St., Philadelphia, Jan. 2, 1931, to deal in scoured wools, noils and wastes. Harold W. Laird and Harry L. Ridge formerly with I. Reifsnyder Son & Co., are members of the new firm.

J. S. Love Mill Group Establish Direct Sales Office

Burlington Mills, Inc., whose New York sales office has been moved to the new Central Hanover Bank Bldg., 271 Church St., Jan. 1, will handle the direct selling of their finished bedspreads under the trade name of "Alamance." Under this new policy, which involves the absorption of the Lima & McDiarmid department of Taylor, Clapp & Beall, the entire production of seven plants in the group headed by J. Spencer Love, including bedspreads, linings and crepes in the gray, novelty jacquards in the gray, and brassiere cloths will be sold by one organization under the direction of J. B. Yates, assistant manager in charge of sales for Burlington Mills. Mills in the above group are Burlington (N. C.) Mills, Inc., Alamance Weaving Co., Holt, Love & Smith, Inc., North Carolina Silk Mills, Inc., Piedmont Weavers, Inc., Pinehurst Silk Mills, Inc., and the Puritan Weaving Co.

J. B. Jamieson Co. Open Providence Office

J. B. Jamieson Co., one of the oldest yarn houses of New England, announced to the trade that beginning Jan. 1 they will have an office in Providence at 111 Empire Street in charge of Walter J. Howland, who for many years has been associated with the textile business in southern New England.

Mr. Howland was for many years with B. B. & R. Knight and more recently with Mount Hope Mill and W. C. Johnson Co.

J. B. Jamieson Co. is New England selling agent for the Nelson group of mills of Lenoir, N. C., making a wide range of combed and carded yarns in regular and reverse twist; also New England agent for the Rowan Cotton Mills of Salisbury, N. C., making combed singles 18s to 50s. The firm represents other spinners.

J. B. Jamieson Co.'s main office is located at 38 Chauncy St., Boston, Mass.

J. H. Schoolfield Now Associated With Waterman-Currier

J. H. Schoolfield, formerly of Schoolfield-Ellis Co., will become associated with Waterman, Currier & Co., Inc. in their New York office. Through this affiliation, Mr. Schoolfield will continue his interest in the distribution of the cotton yarn products of the Riverside & Dan River Cotton Mills, Inc., Danville, Va., and Mandeville Mills, Inc., Carrollton, Ga., for whose yarn products Waterman, Currier & Co. have been appointed sole selling agents. J. W. Sauer, who was also with the Schoolfield-Ellis Co. will be located in the office of Waterman, Currier & Co. at 1600 Arch St., Philadelphia.

Perkins & Boland New England Agents for Dixie Mercerizing Co.

Perkins & Boland, Inc., 99 Chauncy St., Boston, Mass., have been appointed New England selling agents, effective Jan. 1, for the Dixie Mercerizing Co., Chattanooga, Tenn.

Perkins & Boland have been selling yarn to the New England trade for about 25 years and are well known in the section, while the Dixie Mercerizing Co. is one of the largest concerns mercerizing, dyeing and bleaching cotton yarns and is a member of the Durene Association.

A. D. Whiteside Now President of R. G. Dun Corp.

The organization of the R. G. Dun Corp. was completed at the close of the year, and it has been established as the holding company for R. G. Dun & Co. and National Credit Office, Inc.

The following officers have been elected: Robert Dun Douglass, chairman of the board; A. D. Whiteside, president; A. W. Ferguson, first vice-president and treasurer; Charles F. Tuttle, second vice-president, and T. W. Cunliffe, secretary.

L. K. Vezin & Co., Open N. Y. Offices

L. K. Vezin & Co., Inc., the organization of which was announced a short time ago in connection with the announcement of the dissolution of the firm of Hinchman, Vezin & Co., opened offices Jan. 2 at 346 Broadway, New York City. Lawrence K. Vezin who was associated with Hinchman, Vezin & Co. for over 34 years is president. The new firm are selling agents for the same hosiery mills they have been associated with in the past.

Cotton Picker Reported Ready for Production

Reports recently received from Pittsburgh state that the Hanauer-Gamble-Berry cotton picker, developed by the Cotton Harvester Corp. of America, has passed federal tests at a Mississippi experimental station. Following these tests the machine, which is the result of six years of experimental work, was pronounced ready for production.

Sperber and Freedman Form New Firm

Nathan Freedman and Joseph Sperber, both formerly associated with Chas. J. Webb & Sons Co., Inc., Philadelphia, have formed a new wool concern. They have taken offices and warehouse space at 130 Chestnut St., and will trade in scoured wools, noils and wastes, under name, Sperber, Freedman Co.

New Fabric House Formed

The firm of Hirsch & Kaim, Inc., has been organized at 132 West 36th St., New York City, by Joseph Hirsch and Bert Kaim, as successors to Griffith & Weil, it is announced. The new firm will handle a collection of rayon fabrics, silk and cotton mixtures and shirtings, for various trades.

New Mauney-Steel Representative

David E. Colehower has been appointed sales representative in the Pennsylvania State territory by Mauney-Steel Co., Philadelphia, cotton yarns. He will make his headquarters in Reading.

Fidelity Finishing Merges With Firth & Foster

An important consolidation of fabric finishing houses was effected in Philadelphia, with the news on Jan. 7 that Firth & Foster Co. had acquired Fidelity Finishing Co. Firth & Foster, a $400,000 organization, was established 18 years ago, and does an extensive business in dyeing and finishing piece goods, velours, fine worsteds, chinchillas and jersey cloths. Albert Foster is president and Chas. E. Firth is vice-president. Fidelity Finishing Works do dyeing and finishing of woolen and worsted fabrics, specializing in men's wear; H. St. Clair Wagner is president and manager. Under the new plan Mr. Wagner will have personal supervision over the men's wear department of Firth & Foster. Officers of the merged company are C. Edward Firth, president; C. Arthur Foster, vice-president and treasurer, and C. M. Bucholz, secretary.

Firth & Foster Co. only recently completed a $350,000 re-equipment program, in which the plant was thoroughly modernized and several new departments added. The acquisition gives Firth & Foster a well rounded organization.

Firth & Foster Co. will have normal capacity of 750,000 yd. per month. Operating at capacity 300 employes are carried on the payrolls.

Wool Institute Directors Meet and Choose Executives

The recently elected board of directors of the Wool Institute, Inc., met Jan. 7, at the offices of the Institute and elected three vice-presidents and an executive committee which will direct the policies of the organization. Names of officers and committee members will be announced at the next meeting of the board scheduled for Jan. 14 at the Manhattan Club.

The board voted not to elect a president but instead to elect an executive committee. F. W. Tipper was named as temporary chairman of the executive committee and Louis A. Hird was chosen temporary chairman of the board of directors. The meeting was confined largely to consideration of changes in the by-laws made necessary by the adoption of new policies for the Institute.

Style Favors New Uses for Worsted Yarns

A line of worsted yarns particularly suitable for making up into fabrics for the current styles of beach pajamas, robes and ensembles and other garments as well as for the knitted outerwear range including bathing suits and jersey cloth is being offered to the trade by William Whitman Co., Inc. The yarns were developed by the Monomac Spinning Co. Fashion trends are said to favor wider use of worsteds in beach apparel than heretofore.

Business News

Heavy Call for Banner Hosiery Machines

Mills placing orders today for the more popular models of Banner hosiery machines, produced by the Hemphill Co., of Pawtucket, R. I., are compelled to wait from three to five weeks for deliveries, according to advices from Pawtucket. This is taken by many as evidence of a turn for the better in the hosiery industry. The present flow of work through the assembly department at the Pawtucket plant is a sound indication that mills throughout the country feel that sales in the coming season will well support the purchase of new equipment.

Interviewed at his New York office, John Lawson, president of Hemphill Co., stated that the recent depression had enabled his company's experimental shop to work out new ideas in production and maintenance economies which will operate to the advantage of the industry.

General Electric Announces Executive Elections

T. K. Quinn of Cleveland and Charles E. Wilson of Bridgeport have been elected vice-presidents of the General Electric Co., H. H. Barnes, Jr., of New York has been made a commercial vice-president in charge of the New York district, and J. L. Buchanan of Bridgeport has been named president of the General Electric Supply Corp., according to an announcement by Gerard Swope, president of the General Electric Co., following a meeting of the board of directors. At the same time the retirements of vice-president Charles E. Patterson, who has been in charge of the merchandise department of the company, and of Cummings C. Chesney, who has been one of the two vice-presidents in charge of manufacturing, were announced.

P. B. Zimmerman of Cleveland, sales manager of the refrigeration department, has been named manager, succeeding Mr. Quinn.

Southeastern Machine Co. and Greenville Firm Merge

The Southeastern Machine Co., of Atlanta, Ga., and the Greenville Spindle & Flyer Co., of Greenville, S. C., have merged and will be operated as the Southeastern Machine Co. In order to take care of the growing business of the Southeastern Co., which does general overhauling of textile machinery, the Greenville plant will be enlarged. George F. Andrews is president of the Southeastern Machine Co.

United Conveyor Corp. Opens N. Y. City Office

The United Conveyor Corp., of Chicago, manufacturers of conveyors and other textile equipment, have opened a New York City office at 101 Park Ave., which is in charge of J. J. McNulta, who was formerly with the Girtanner Engineering Corp. Mr. McNulta will be in charge of the New York and New England districts.

Linde to Market Union Carbide Products

The Union Carbide and Carbon Corp. announces that hereafter those units of the company whose products are used in the main for oxy-acetylene welding and cutting are to market their products through The Linde Air Products Co. It is now possible, therefore, to secure Linde oxygen, Union Carbide, Prest-O-Lite dissolved acetylene, and Oxweld, Prest-O-Weld and Purox apparatus and supplies through Linde. This new arrangement has been made for the added convenience and economy of the users. There have been no changes in telephone numbers or addresses of the distributing stations from which these products are secured and customers can continue to place their orders at these points.

Chicago Bridge & Iron Works Contest Draws 691 Entries

The elevated steel tank competition sponsored by the Chicago Bridge & Iron Works upon which the entries closed Dec. 1, has created considerable interest, judging by the number of applicants. Six hundred and ninety-one architects, engineers and draftsmen have registered their names with Albert M. Saxe, the professional adviser and are now at work on their designs which are due on March 1.

F. W. Deppe Sales Head for Reading Iron Co.

F. W. Deppe, district sales representative at St. Louis, Mo., for the Reading Iron Co., of Reading, Pa., has been appointed general sales manager for that company, and will make his headquarters in New York City.

Obituary

George McFadden

George McFadden, senior partner and manager, George H. McFadden & Bro., cotton brokers, Philadelphia, died suddenly Jan. 5, at his home, "Bloomfield," in Villanova, Pa. He was the son of the late George H. McFadden, one of the world's foremost cotton merchants. He was a graduate of the University of Pennsylvania where he had been a star athlete. Later he became chairman of the board of trustees of the University of Pennsylvania hospital. Mr. McFadden was a director of the Philadelphia National Bank, Girard Trust Co., and a member of the board of managers of the Western Savings Fund Society. In 1919 the Government awarded him the Distinguished Service Medal for his war activities. Surviving him are his widow and four children.

Frank N. French

Frank N. French, treasurer of the Universal Winding Co., Boston, Mass., died suddenly in Randolph, Mass., Jan. 4, of a ruptured appendix. Mr. French was 47 years of age. After being graduated from Thayer Academy, Braintree, Mass., he entered the employ of the Universal Winding Co. and rose from the ranks to the office of treasurer. Mr. French was a life-long resident of Randolph and was a trustee of the Turner Free Library of that town and a director of the Randolph Savings Bank. He was also a member of the Boston Chamber of Commerce. Survived by his widow, Bertha E., and by four sons.

Lt.-Col. James Woods

Lieut.-Col. James Woods, president of the Empire Cotton Co., Welland, Ont., Canada, died recently at his home in Ottawa, Ont. He was well known in the textile industry. He is survived by a widow and four children.

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